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ABSTRACT

Presentations made at this semiannual meeting include papers on the first 50 years of the Association of Research Libraries (ARL) and the challenge to libraries from changing scholarship, a report from the Library of Congress (LC) on new preservation technologies, and a report on the ARL business meeting. Individual papers address the history of ARL (Stephen A. McCarthy); the influence of ARL on academic librarianship, legislation, and library education (Edward G. Holley); the relationship of ARL and LC (William J. Welsh); and the history and concerns of Canadian research libraries (Marianne Scott). Challenges to libraries from the humanities (Ralph Cohen), the sciences (William K. Hartmann), and the social sciences (Kenneth Prewitt) are outlined, and a subsequent panel discussion and other remarks are recorded. The LC report covers mass deacidification (Peter G. Sparks), optical disk technology (William R. Nugent), and the application of optical disk technology in a pilot project at the LC Cataloging Distribution Service (David G. Remington); discussion on the report is transcribed. Five reports from the business meeting and a revision of ARL bylaws are included. Appendices comprise excerpts from the commemorative program of the 100th meeting; ARL bylaws; two further ARL reports; lists of meeting participants and ARL officers, directors, committees, task forces, and members; and the auditor's report for 1981. (ESR)

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IN SERVICE TO SCHOLARSHIP

Minutes of the One Hundredth Meeting

May 6-7, 1982
Scottsdale, Arizona

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ASSOCIATION OF RESEARCH LIBRARIES

MINUTES OF THE 100TH MEETING

The 100th Meeting of the Association of Research Libraries was convened at La Posada in Scottsdale, Arizona on May 6-7, 1982, with Millicent D. Abell presiding.*

MS. ABELL: Good morning and welcome to the 100th Meeting of the Association of Research Libraries.

We have a number of introductions to make this morning. First, there are several very special guests for this 100th Meeting. Since 1962-63, ARL has been served by people bearing the title Executive Director, and, with the exception of Donald Cameron who was the Executive Director in 1967 and is now deceased, all of those Executive Directors are with us today. I would like to introduce them in order of their service: James Skipper, Stephen McCarthy, John McDonald, John Lorenz, Ralph McCoy. We are especially honored that all of you could be here.

I would also like to introduce four past ARL Presidents, who are special guests today, no longer ARL directors, but still very much a part of our collegial life: Robert Vosper, Andrew Eaton, Virginia Whitney, Edward Lathem. You honor us all by being here.

There is another very important group I would like to recognize on this occasion: past presidents of ARL who are active directors. I want to ensure a precedent of treating past presdidents kindly, so I am going to introduce those people now and ask them to stand and be recognized: John McDonald of the University of Connecticut, William Budington of the John Crerar Library, Richard De Gennaro of the University of Pennsylvania, Le Moyne Anderson of Colorado State University, and Jay Lucker of the Massachusetts Institute of Technology.

Finally I would like to recognize one of our colleagues who will retire later this year: Bruce Peel, who has represented his institution, the University of Alberta, in ARL since 1968.

And with the business concluded, I would now like to introduce the Program Chairman, my predecessor as ARL President, Jay Lucker.

*Excerpts from the Commemorative Program for the 100th Meeting appear in Appendix A.

ARL: THE FIRST FIFTY YEARS

Introduction

MR. LUCKER: Thank you. This morning we are here to celebrate ARL, its 100th Meeting and its first 50 years. Let me remind you that ARL sprang from the desire of a small group of academic library administrators to serve their institutions better, and I hope that we keep this in mind, not only today, but in the future. I want to look back at a little bit of history and I benefit in this connection from Frank McGowan's excellent history of the ARL.

Going back to the earliest times, the first college library was founded in the United States in 1638 at Harvard College, with 400 volumes. By 1800, eight more colleges had been founded, none of which had library collections of over 13,000 volumes. By 1850, there were only five libraries in the United States that had 50,000 volumes or more. They were: Harvard College, the Philadelphia Library Company, Yale University, the Boston Athenaeum, and the Library of Congress.

In 1900, 14 institutions banded together to found the Association of American Universities, which is, as you will recall, not an insignificant milestone in the formation of ARL. Those fourteen institutions, all of whose names appear in the program, were: the University of California, the University of Chicago, Columbia University, Harvard University, Johns Hopkins University, Catholic University, Clark University, Cornell University, the University of Michigan, the University of Pennsylvania, Princeton University, Stanford University, the University of Wisconsin, and Yale University. These institutions formed the nucleus of ARL.

We now leap ahead many years to just before the formation of ARL. I will quote from McGowan's history, in which he quotes Keyes Metcalf, who said, "Prior to the establishment of the Association of Research Libraries, informal meetings of reference librarians and heads of major libraries took place at the ALA Conference. These influential individuals, many of whom were as notable for their corpulence as for their influence, referred to themselves as the big librarians."

In 1931, a planning group consisting of Phineas Windsor of the University of Illinois, Charles Brown of Iowa State, Harold Leupp of the University of California at Berkeley, Earl Manchester of Ohio State, and James Gerould of Princeton, got together to talk about the formation of an association, and sent letters to 42 libraries, of which 29 were AAU members. In its letter, the planning group made a series of recommendations, the first of which said, "We recommended the formation of an organization to be known as the Association of Research Libraries, or some similar title, consisting mutually of the libraries of institutions, members of the AAU, with certain obvious additions, and the larger public reference libraries. Other institutions may, from time to time, be elected as members."

The second recommendation outlined options, including an independent organization and possible association with the American Library Association. A third recommendation was that ARL meet generally at the time of ALA meetings, but occasionally meetings might be arranged at another time or place, as, for example, at one of the learned societies. Fourth, attendance at these meetings

should be limited to the librarians of the institutions concerned and duly designated assistant librarians or department heads. Fifth, formal programs should be avoided. And sixth, in order to insure simplicity of organization, the officers should be confined to an annually elected Chairman and Secretary-Treasurer.

Thirty-three libraries responded positively. In December 1932, the first meeting of the Association of Research Libraries was held in Chicago, in conjunction with the Midwinter Meeting of ALA, at which meeting the major achievement seems to have been the election of a slate of officers.

What we would like to do today is trace the history, development, and achievement of ARL. We have a group of very eminent and competent speakers who will approach this theme from a variety of perspectives. Without further ado, let us move on to the first speaker.

ARL: PAST AND PRESENT

Stephen A. McCarthy
ARL Executive Director, 1968-74

MR. LUCKER: Our first speaker is someone who has already been introduced. Stephen McCarthy is a native of Minnesota. He was educated at Gonzaga University and the University of Chicago, and has held a variety of positions in academic libraries: Saint Johns University in Minnesota, the University of Chicago, Northwestern University, University of Nebraska, Columbia University. He was Director of Libraries at Cornell University from 1946 to 1967, Executive Secretary of ARL from 1960 to 1962, while he was at Cornell, and from 1967 to 1974 he was Executive Secretary of the Association of Research Libraries.

It is a great pleasure to welcome back again our friend and colleague, Steve McCarthy.

MR. McCARTHY: "Libraries are not made, they grow," according to an obiter dictum of the British essayist Augustine Birrell. What is true of libraries may or may not be true of all library organizations, but it certainly is true of the ARL. It has been growing for 50 years, it is now fifty years old or young, as you choose, and its best years are ahead of it. I am sure you will agree that this is the case and that you will go on to make it so. As a prelude to these "best years", Jay Lucker and the Program Committee have decided that a backward look might serve a useful purpose. My effort will be to describe briefly and comment on the development of the ARL over these past 50 years.

Since this is the fiftieth anniversary year for the ARL, the first meeting was held in 1932, but just barely. The date was December 29. Dr. James T. Gerould, Librarian of Princeton University, was "mainly responsible for the organization of the Association of Research Libraries," according to Wilson and Tauber, who go on to say of Gerould, "He was impressed with the importance of providing a medium through which the problems of research libraries could be considered effectively without involving a large, heterogenous membership."[1] As would be expected, Gerould called the meeting to order and Edward Henry, of the University of Cincinnati, was appointed Secretary. The meeting proceeded to adopt a constitution which had been prepared in advance by the organizers. The purpose of the organization was stated in Section 2, which read as follows: "The object shall be by cooperative effort to develop and increase the resources and usefulness of the research collections in American libraries." Membership in the Association was institutional and its leadership was placed in an Advisory Committee of five and an Executive Secretary, all of whom were elected for five-year terms. The Advisory Committee and the Executive Secretary also served as the Membership Committee. Election of new members was by a two-thirds vote of the members present and those voting by mail, and membership could be terminated in the same way. The annual dues were $5, and failure to pay dues for two successive years was cause for termination. I found no record of such action.

It has been remarked of the ARL that it was characterized by its casual attitude on organizational and procedural matters. This quality is evident in the list

of original charter members, December 29, 1932, which in addition to the 42 members of that date lists the Boston Public Library with the date October 1933. This informality carried over into the operations of the new organization: the Executive Secretary was a non-salaried officer; the office was the Executive Secretary's briefcase; and the clerical and secretarial work was done by the Executive Secretary's secretary. Most meetings in the early years were dinner meetings and there was no formal agenda. The Advisory Committee introduced topics for discussion and individual members could make suggestions by communicating with the Executive Secretary in advance, or could raise questions or offer comments at the meeting. It was customary to hold the meetings in conjunction with the ALA meetings, as a matter of convenience and economy for the Association and for its members.

I am indebted to Frank McGowan and his dissertation on the ARL for the following analysis of the initial membership: "Inclusion of twenty-nine libraries as charter members of the Association was based upon membership in the American Association of Universities. Eight additional academic institutions were considered suitable by the organizing committee, as were five non-academic research libraries."[2] In this connection, it should be noted that both graduate study and research in those pre-war years was much more highly concentrated in a relatively small number of institutions than has been the case in the decades following the war.

Among the topics that interested the ARL in its first years of existence were the bibliographical control of dissertations, the strengthening and use of the Union Catalog at the Library of Congress as a clearinghouse for interlibrary loan requests, German scientific periodicals which were increasing in cost and deteriorating in physical condition, and the service basis pricing of the indexing publications of the H. W. Wilson Company. With the cooperation of the Association of American Universities (AAU), the Executive Secretary of the ARL became the editor of the annual publication Doctoral Dissertations Accepted by American Universities, which was published by the H. W. Wilson Company. Members of the ARL were major contributors to the Union Catalog at the Library of Congress as well as active users of this catalog as an aid in securing interlibrary loans. At that time the Union Catalog compiled a list of unlocated titles which was distributed to ARL libraries for checking and report to the Library of Congress. In this connection a forerunner of the New Federalism appeared in April 1936 when Mr. Kletsch, of the Union Catalog, wrote the Executive Secretary and requested "an appropriation from the ARL for the purchase of some duplicating machine, possibly a secondhand mimeograph, in order to extend the service of the clearinghouse to all American libraries." The ARL did not rush to the rescue. Instead it noted that the added load coming from ARL members had not been demonstrated. The propriety of spending ARL funds for equipment to be used by the Union Catalog was also questioned.

Another machine note from the 1936 meeting was the request made by Dean Louis R. Wilson of the Graduate Library School of the University of Chicago that he be informed of any application of business machines, particularly the Hollerith tabulator, to library procedures. He noted the interest of a graduate student in this equipment and its use by Donald Coney for the analysis of circulation records.

Since ARL members were large libraries they were charged the highest prices for the Wilson indexes purchased on the service basis. The view of the membership

was that smaller libraries voted for the inclusion of additional periodical titles to be indexed and this increased the cost to the ARL libraries. It was also noted that some state institutions might be acting illegally if they paid more for a given product than other purchasers. This led to a long, detailed, exhaustive study of the Wilson service basis pricing, by Miles O. Price, Law Librarian at Columbia, and his wife, on behalf of the ARL and with the full cooperation of Mr. H. W. Wilson. Because the Price study was so thorough and so lengthy, it has been alleged that no one ever read it. In any case, it was decided to engage a consultant to evaluate the study and then negotiate with the Wilson Company. It turned out that Mr. Wilson was a better salesman than the consultant. The outcome was a clarification of the elements of the service basis and its acceptance, with reluctance, I suppose, by the ARL.

In the late '30s, there was a discussion of the desirability of publishing the catalog of the Library of Congress. At the outset, the Library of Congress was not interested, but with the passage of several years the view changed and the LC was receptive to the project. The ARL was the principal promoter, securing subscription orders and working with LC and the publisher to get the production under way. There was a problem about the title of the catalog because it could not be the finished bibliographic publication that LC wanted and thus it could not be called "The Library of Congress Catalog." It was finally agreed that the title should be A Catalog of Books Represented by Library of Congress Printed Cards. Once published, of course, it was promptly called "The Library of Congress Catalog." It was a first of the many published catalogs reporting the general collections of the Library of Congress.

The membership of the ARL remained approximately the same during the first 20 years of the organization's existence. There were, however, some changes over the years through the election of new members, the withdrawal of several others, and the voting out of a total of eight members. In 1952 there were 45 members, as compared with the 42 or 43 charter members.

This constancy of membership reflected the point of view that seems to have been dominant among the founders of the ARL, to the effect that a small organization made up of large libraries with common problems was the best instrument for solving these problems. Another aspect of this attitude was the view that the ARL should be primarily a high-level planning and policy group rather than an operating agency. The ARL did not consider itself to be in competition with any other organization nor did it duplicate the work of any other organization; rather it sought only to do things that needed doing and were not being done.

Although membership was controlled and not open, the Association had not developed and disclosed a set of clear, objective criteria for membership. There had been at least one instance of a membership based on the personality of the librarian, rather than on the status of the institution's library, certainly a curious anomaly in an organization composed of institutions. It was thought, rumored, and said that the ARL was a club, not a professional library organization, and that institutional membership was used as a cloak to cover friends and exclude others. Let's face it: there was a lot of criticism and some of it was deserved.

In fairness, however, it can certainly be argued that the object of the founding

group was not to be small, selective, and, if you will, elite, solely for the sake of being small, selective, and elite. Instead, the objective was that stated in the constitution—"to develop and increase the resources and usefulness of the research collections in American libraries through cooperative effort." The best mechanism for achieving this objective was an organization of modest size made up of institutions that faced common problems, many of which could best be dealt with by a shared and concerted effort. If one recalls the conditions of 1932 generally and the prevailing situation in higher education and research, it seems to me that the position of the organizers of the ARL becomes clearer and its justification sound. We all know from experience that it is easier to work with a small, cohesive group than with a large one. In a small group participants are more likely to accept responsibility, to express themselves freely, and to carry through an agreed action. Beyond this there is the economy of time and money. All of these factors plus, admittedly, a high level of self-appreciation on the part of the founders, led to the conclusion that a small, high-quality ARL was the desideratum.

However, by the mid 50s, after the passage of more than 20 years, many changes had occurred in research libraries, at their parent institutions, and in academic research. Not only were the number of students greatly increased, but so was the number of institutions of collegiate and university level and the number offering advanced graduate work. The new emphasis on graduate study represented a significant change from the pre-war years. These many new factors called for appropriate changes in organizations that undertook to assist research libraries in meeting their obligations to the scholarly community. But the ARL Membership Committee in 1956 saw it differently and announced what they chose to call, "a return to first principles." As a result of the Committee's work, four new members were added to the ARL. The Committee's action very probably no longer represented the prevailing view of the membership, but several more years were to elapse before action was taken to adjust the ARL to the new postwar world.

In keeping with the objective to increase research library resources and after several years of discussion, the ARL, in 1947-48, embarked on the Farmington Plan. This project arose out of the wartime experience which showed that the nation's libraries were deficient in their holdings of important publications issued in foreign countries. To correct this situation, the Farmington Plan was designed as a program that would ensure the acquisition and prompt cataloging of at least one copy of every important publication which appeared anywhere in the world. The plan invited libraries to commit themselves to accept all publications in a selected subject field and language as they were supplied by the designated dealer. The plan was first applied in Europe. At a later date publications from other countries were acquired by libraries at whose institutions special area teaching and research programs were carried on. There were of course countless difficulties and problems. They arose on all sides. There was the need to identify competent, responsible dealers who were prepared, able, and willing to undertake the work of selection and supply on the one hand, and on the other there were the participating libraries each with its own expectation of what the plan would produce and each struggling to modify its acquisition and cataloging procedures to conform to the requirements of the new program. Those responsible for the program established a reporting procedure in order that an evaluation of the project might be undertaken at a later date. This led to the publication of the Farmington Plan Newsletter, which later became the Foreign Acquisitions Newsletter, published by the ARL until its recent discontinuance.

The Farmington Plan may, I think, be properly regarded as the forerunner and exemplar of several other cooperative acquisition programs which have been carried on in the past 25 or 30 years. These programs have been financed in part by the federal government largely through the provision of soft currencies made available for the purchase of foreign publications for American research libraries. The National Program for Acquisitions and Cataloging at the Library of Congress now financed by regular Library of Congress appropriations is the most recent of these programs. In hearings for the establishment of these programs and subsequently for supporting appropriations, the ARL has played a part.

James T. Gerould was not only the leading organizer of the ARL, he was also responsible for what has become over the years one of the most useful services of the Association. As Librarian at the University of Minnesota, he began collecting and distributing in a limited way a report called Statistics of University Libraries. When he moved on to Princeton, the Statistics accompanied him. Under the name of Princeton Library Statistics it was continued until 1962-63. This compilation of data was taken over as an ARL responsibility in 1963-64, and renamed Academic Library Statistics. It is now called ARL Statistics. For the group of libraries included from the beginning this is a remarkably long statistical record. For practicing ARL directors, the Statistics have always been an important tool to evaluate a library's progress, to gauge its status vis-à-vis its peers, and to support the case for increased staff, book funds, and other library purposes. The expansion of ARL Statistics in recent years in its inclusiveness, its analytic tables, and its availability on tape and machine-readable form—all these make the ARL Statistics indispensable to the academic library administrator.

Over the past ten years the ARL has also developed and published the Annual Salary Survey, as a means of providing prompt information in this important area. Two useful, special statistical reports have been published during the past year: The ARL Library Index and Quantitative Relationships in the ARL, and Cumulated ARL Library Statistics, 1962-63 to 1978-79. Both reports are available on tape as well as in book form. They represent a significant achievement on the part of the Committee on ARL Statistics, as they make useful data readily available for study and analysis. In its statistical publications, as in other areas, the ARL has sought to fill a need which no other library organization or government agency was willing or prepared to do. At one time it seemed that the ALA or the Educational Statistics unit of the Office of Education might perform this service. In the event, this did not happen, hence the continued and increased ARL activity.

In 1954 the ARL sponsored a conference of librarians and university administrators to discuss the financial problems of research libraries. The conference was designed to respond to a statement which appeared in Financing Higher Education in the United States by John D. Millett, which said among other things, "the library profession as such puts little emphasis on economy."[3] The papers and discussions of this conference were published in the following year under the title Problems and Prospects of the Research Library. The conclusion of the conference was a recommendation to the Association of American Universities that it appoint a Commission on Research Libraries and that it solicit foundation support for a study of research library problems. The AAU took favorable action on this recommendation. This action was intended to provide the same kind of mechanism that had carried out the study of financing higher education.

The record does not show that this study was ever undertaken. In a sense, this was an effort that failed apparently because the AAU was not successful in obtaining the necessary support. The conference did, however, provide an opportunity for library directors and university administrators to exchange views and get better acquainted with each other. In this respect, at least, the conference was not a failure.

As noted earlier, there had been a number of changes in membership during the '40s and '50s, but in 1956, 24 years after its founding, the ARL had only 49 members, six or seven more than at the first meeting in 1932. At the same time, the number of higher education institutions had grown dramatically, the programs of graduate study and research had been greatly expanded, and the enrollment at all levels of higher education was increasing substantially each year. In the decade following the war there was steady growth in the volume of publication in this country and abroad, and American libraries in considerable numbers were acquiring more publications than ever before. In addition to the normal university programs, many institutions were engaged in government supported research projects, some of which had substantial library implications.

Moreover, the National Science Foundation had the responsibility to foster scientific research and to assist and support the information element in science research. This mandate led to investigation and experimentation designed to enhance the quality and availability of scientific information. In order to accomplish this objective, the Science Information Division of the NSF extended its interest to agencies that were responsible for assembling, organizing, and facilitating the use of science information as a significant element in science education and research. Since the ARL roster included many of the institutions at which research and training sponsored by NSF were under way, the Foundation's concern for the strength and activities of the Association was to be expected. Discussions between representatives of the NSF and the ARL resulted in a preliminary understanding to the effect that the NSF would be prepared to give favorable consideration to a proposal from the ARL seeking assistance in reorganizing the Association to make it more broadly representative of the research library community. ARL would become a corporation with a headquarters office and a commitment to operational activities.

In 1961 the ARL voted that a committee be appointed to take the steps necessary to reorganize the Association. This was done prior to the meetings in January 1962 at which the new constitution and other necessary documents were unanimously approved. This action set the stage for the ARL as it is today. James Skipper accepted appointment as Executive Director and established temporary headquarters at the National Library of Medicine. In the summer of 1963 the new office in the Brookings building was occupied.

At the July 1961 meeting, Robert Vosper was asked to report the libraries that might be expected to become members based on five-year averages of book funds, number of Ph.D.s granted, and number of fields in which the Ph.D. was offered. This resulted in a list of 30 potential members. After consideration by the Board of Directors and subsequently by the membership, 22 university libraries and the Center for Research Libraries became members, bringing the total number to 72.

Since that time there have been further efforts to adapt and reformulate membership criteria for university libraries and to identify and establish suitable criteria for nonacademic libraries. The record of the past ten years shows how difficult it is to set up and maintain equitable criteria. The last effort was made in 1980. It is to be hoped that the new guidelines or criteria may prove more satisfactory over a longer period than has been the case in the past.

After the reorganization of 1960-61, the ARL set about doing the things that were expected of it. It has had a degree of success. With foundation and government support it has undertaken projects and studies of research library problems and published the results, including the reports on the use and bibliographic control of microforms, on book storage, on library lighting, on interlibrary loans and interlibrary communication, and on a plan to make periodical resources more accessible. It has substantially expanded and strengthened its statistical publications, it has assisted in building up research resources by its role in various cooperative programs and through the establishment of the Center for Chinese Research Materials, it has sponsored the Office of Management Studies with its many activities and publications, and it has taken an active part in the effort to assure libraries and their users appropriate access to copyrighted material. No doubt more could have been done, given different circumstances and greater talent, but the record does not call for apologies.

Despite some of the unpleasant connotations of words used to characterize the ARL from time to time, the Association has continued on its way undeterred and, I trust, with serenity. As a small group whose meetings were open only to members and their guests, it was perhaps only natural that there be resentment and criticism. From the perspective of the membership, it was a group of libraries that had common problems and this organization was an effective mechanism for solving them. Certainly the ARL started modestly; it grew slowly; and it came to maturity in the '60s and '70s. It grew only as its resources and opportunities permitted. Had it begun with the goal of becoming a large organization as quickly as possible, it might have fared better, but there is also the possibility that it might have failed. One can rationalize the preferred conclusion.

The Committee on Research Libraries of the American Council of Learned Societies had this to say in its 1967 report entitled On Research Libraries: "Founded in 1932, the Association (of Research Libraries) has had a notable record, not only in diagnosing and prescribing for the ills of research libraries, but in devising projects and programs to enhance the value of library services to the research community."[4]

As it begins the second half of its first century, the ARL faces many difficult problems, ranging from the need for highly qualified personnel and substantial financial support to the most effective and economical use of computer technology and communications facilities and to the best methods of preserving the records of human achievement. However you may characterize the organization, the ARL has a major job to do.

The ARL cannot solve all the problems, but it can solve some of them and it can help solve others if it is determined to do so. Whatever it has been in the past and no matter the criticism and the mistakes, the ARL now and in the years

immediately ahead is you—no one else. What the ARL will accomplish is what you do, no one else will do it for you; what you do not do will very probably not get done. I wish you good luck.

* * * * *

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THE INFLUENCE OF ARL ON ACADEMIC LIBRARIANSHIP, LEGISLATION, AND LIBRARY EDUCATION

Edward G. Holley
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MR. LUCKER: Our second speaker is Edward G. Holley, again someone almost everybody in this room knows. He is a native of Tennessee, and attended David Lipscomb College and George Peabody College for teachers in Nashville, and the University of Illinois. Following a number of positions in academic research libraries, he became librarian of the education, philosophy, and psychology library at the University of Illinois. From 1962 to 1972 he was Director of Libraries at the University of Houston. Since 1972, he has been Dean of the School of Library Science at the University of North Carolina in Chapel Hill.

In addition to his administrative and academic responsibilities, Ed, as most of you know, served as President of the American Library Association. He was also President of the Texas Library Association, and he was recently appointed to the ARL Task Force on Library Education.

MR. HOLLEY: Only once before have I appeared before the members of the Association of Research Libraries. Ten years ago, following a Council on Library Resources Fellowship, I addressed your meeting in Atlanta on the topic, "Library Governance in Higher Education: What is evolving?" At that meeting, I remarked to the late Charles Stevens, then Director of the National Commission on Libraries and Information Science, that I found the ARL meeting one of the most stimulating professional conferences that I ever attended. Stevens agreed. He then added that he always found the ARL meetings the most important of any he attended because the members always discussed major topics of national and international concern. The broad approach, the national perspective, the general lack of a provincial or parochial point of view, all seemed to Stevens a vital testimony of the effectiveness of the Association of Research Libraries.

As a library historian, I do not find Charles Stevens's comments surprising. Any social organization which consists of the leaders of major research institutions should address matters of significance beyond their local concerns. Moreover, the academic milieu in which ARL directors operate ought to stimulate thinking about the problems of society as a whole and how research libraries affect and are affected by such problems. In the academic tradition of weighing all issues carefully, looking at various alternatives and making decisions after thoughtful analysis, the ARL director is in a better position not only to make decisions affecting his or her library system but also to consider the impact of those decisions on other libraries or information centers.

Whether such decisions are the actual outcome of such deliberations, of course, the historian or sociologist must ultimately assess. Mere debate and analysis do not always result in action, whether positive or negative. As Louis Kaplan has noted in his own assessment of the Association of Research Libraries, an earlier leadership group, the American Library Institute (1905-1951), testifies to the failure of one library leadership group in our history to achieve laudable goals.[1]

Though Kaplan believes ARL has not been "resplendent in the fulfillment of its goals," I believe that objective analysis can lead one to the opposite conclusion. When I began research for this paper, I had my assistant, Margaret Miles, make a chart of the issues discussed in ARL's Minutes and Newsletter for the past 20 years. The range is truly impressive, but the major topics have clearly been: 1) bibliographic control, in its many formats, including cataloging, support for the Higher Education Act of 1965, Title II-C (both the original and its subsequent revision) out of which emerged the National Program for Acquisitions and Cataloging, CONSER, doctoral dissertations, etc.; 2) relations with the higher education community, especially as that relationship involves financing research and libraries; 3) resource sharing, including such cooperative programs as the Farmington Plan, the Chinese and Slavic Centers, consortia, bibliographic utilities, collection development and management; 4) federal programs, including the aforementioned Higher Education Act but also copyright and other legislation of importance to research; 5) library management (a development of the '70s), including staff participation in governance, staff development, the Management Review and Analysis Program, the establishment of the Office of Management Studies, etc.; 6) technology, which could be listed under any of the above, but not forgetting the concern with the microforms, MARC records, videodiscs, and approaches to preservation such as permalife paper and the Barrow experiments; and 7) the ARL itself, its organization and role, the kind of navel gazing in which most social groups engage from time to time (yours has chiefly related to which institutions we shall let in and which we shall leave out).

Now that is a formidable list by anyone's definition. Not all projects have succeeded, of course, and some probably stayed in place beyond their period of usefulness, e.g., the Farmington Plan. Yet throughout the whole list runs a theme of commitment to cooperative action for solving common problems. In an earlier essay, I noted the role played by professional organizations in cooperative enterprises is also often overlooked.[2] Librarians tend to take their associations for granted. At the same time, they expect those associations to be there and provide the organizational framework through which they can discuss future plans, publish the professional literature, promote surveys and research, encourage library development, and lobby for legislative support. Clearly, professional advancement would be seriously handicapped without organizations which develop group consciousness and respond to the public interest in ways which achieve socially desirable goals.

In this general sense, the ARL has made a number of important contributions to academic librarianship. Like most organizations, the Association existed for many years with few, but important victories. Frank McGowan[3], ARL historian for the period 1932-62, gives the Association credit for bibliographic control of doctoral dissertations (with the concomitant publication of dissertations on microfilm by University Microfilms), publication of the 1942 Library of Congress Catalog, inauguration of the PL-480 Program, and the development of the Farmington Plan. For much of its first 30 years, ARL was perceived as a clubby little group of administrators who focused on a narrow segment of librarianship and were not very well tuned in to the larger world in which the American Library Association operated. Doubtless that perception was reinforced by the confidentiality of the early Minutes, Ralph Ellsworth's characterization of ARL's as "a nice fellowship of like-minded men," and the members' refusal to let the editor of the Library Journal attend and report on their meetings.[4]

That perception was reinforced by Ellsworth's much-quoted comparison of ARL to ALA in his 1961 "Critique of Library Associations in America," in Library Quarterly.[5] Yet Ellsworth's contention that ARL has drained time and talent from ALA and its largest division, the Association of College and Research Libraries (ACRL), seems to me not to stand up under serious examination. If Ellsworth is correct in asserting that ARL directors do not want to waste their time on the bureaucratic ALA and that they prefer ARL because of its emphasis on action versus talk, his assertion must apply only to some ARL directors. McGowan pointed out that nine ARL members served as ALA Presidents from 1932-62. An additional five have served in the last 20 years, excluding the speaker who was not a director of an ARL library at the time, but whose background was clearly in that tradition. Moreover, in ACRL's 44-year history, over half of the ACRL presidents have represented their institutions in ARL, including five of the last six ACRL presidents. Their number certainly included ALA's chief critic, Ralph Ellsworth, who served ACRL as president not once but twice! Whatever failures ACRL may have had in the past, they cannot be accounted for by any siphoning off of time and talent by ARL. In addition, many members of the ARL have served on important ARL boards and committees, including at least one ARL member on every ALA Committee on Accreditation for the past decade. Thus I can only conclude that the relationship of ARL to ALA, while it might have declined in recent years, as ARL has moved from a club to a more professional association, has been and is now a rather close one, even if it may have been indirect.

Now let me return to my earlier conversation with Charles Stevens. His off-the-cuff assessment ten years ago seems to be very much on the mark. A major contribution of ARL to academic librarianship has been as a forum for the discussion of major policy issues. In my opinion, there does need to be a forum where national and international issues receive careful study from persons with the background and knowledge to make solid recommendations to appropriate organizations. ARL's discussions having been reported thoroughly in its Minutes and represent a significant contribution to our professional literature. As a careful reader of the Minutes I am convinced that Stevens was right. ARL discusses important issues which either are not addressed at all by other associations or which could not receive the in-depth attention they deserve in other organizations.

Despite Ellsworth's encomium, some critics of ARL argue that ARL talks more than it acts. Both Kaplan and McGowan comment that ARL's history represents a mixture of talk and action. In assessing ARL's effectiveness in terms of its stated goals, Kaplan observed that the Association has done little to encourage research (emphasis mine) in the problems of ARL libraries or in the education of research librarians.[6] McGowan noted that ARL ignored more issues than it undertook.[7] On the other hand, one might argue reasonably that ARL's history reflects a careful tailoring of priorities to those issues where its influence can have the greatest impact. To identify issues, to clarify thinking, to develop statements of national policy, represents important contributions which any profession neglects at its peril. My own view is that policy analysis, i.e., the sophisticated discussion of important issues, may well represent ARL's major contribution to academic librarianship.

Turning now to legislation, my second assigned area, what have ARL's achievements been in this area? Library literature, correctly in my opinion, gives

ARL major credit for the National Program of Acquisitions and Cataloging (NPAC), fathered and nourished by the late William Dix. NPAC, former Title II-C of the Higher Education Act of 1965, was entirely in the tradition of ARL's major focus on bibliographic control. Dix, as an active member of ARL and soon to be President during that Association's most difficult year, was in an excellent position to push for this legislation. He had his own problems in coping with the cataloging of Arabic and other esoteric materials at Princeton and was keenly aware of the waste involved in cataloging the same title more than once. By any objective assessment, the implementation of this legislation has saved all libraries throughout the country enormous amounts of money. Funds under Title II-C enabled all libraries, through access to increased quantities of Library of Congress bibliographic data, to keep pace with the flooding tide of books and periodicals spawned by increased state and federal support during the late '60s and early '70s.

Legislation, of course, is a sometime thing. Title II-C (NPAC) came into existance during those halcyon days of the Great Society. The smoothness which the original II-C funds were subsequently transferred to LC's operating budget and the substitution of a new Title II-C for Strengthening Research Libraries Resources represents notable successes. Other legislative activities have followed the normal pattern of delay, and occasionally, defeat. One remembers the long and costly efforts to revise the 1909 Copyright Law. In his remarks on "The Future of ARL," David Weber called this battle "a major defense effort" which was debilitating.[8] As a one-time participant in that fight, I concur with his judgment. That ARL played a major role in the battle for the Copyright Act of 1976, along with ALA and several other library associations, is clear. After one joint meeting of librarians and publishers, I remember one official from a major publishing firm expressing the hope that Steve McCarthy would soon retire so that we could get on with the passage of "reasonable" law!

ARL's meetings in recent years have concentrated on federal legislation for obvious reasons. Through student aid, research grants, and categorical programs the federal government has become a major factor in higher education's funding. Again, as Weber's speech reminded us, that funding has brought its price in a degree of federal control, even as the old-time opponents of federal aid to education used to remind us 30 years ago. Yet the health of libraries, especially research libraries, depends very much on the health of the parent institution. The financial health of universities is in serious danger of being eroded, not just from federal reduction of library aid but particularly in proposed reductions in student aid, which is even more crucial to private universities and smaller universities than it is in large public universities. ARL, accustomed to thinking in broader terms than just libraries, needs to be sensitive to these developments, as I am sure you will.

One of the problems facing ARL in the legislative arena is the fact that the group is small, unashamedly meritocratic, and poorly dispersed geographically. Those adjectives are not hurtful nor a deterrent when the economy is flourishing, but can be disastrous if not approached judiciously when budgets are tight. Within the ARL itself there has been some fighting over the revised Title II-C and the allocation of grants to a relatively few large institutions. The U. S. Department of Education's policy of making large grants to a very few institutions, incidentally, was one consciously pursued by the former Commissioner of Education, Ernest Boyer. But the complaints about this distribution of funds illustrates the difficulty

of maintaining a united front. Yet to proceed in the federal legislative arena without a united library front will almost certainly ensure defeat as Lee Jones noted in an article on "The Politics of Consensus" in the Journal of Academic Librarianship last year.[9]

Jones used the National Periodicals Center (NPC) as a major illustration of the need for compromise. The National Periodicals Center, despite several years of discussion in ARL and other circles, had not elicited much support from the larger library community. By the time Lee Jones, Nancy Gwinn, and Richard De Gennaro appeared at an ALA conference to talk about NPC, some of us could sense that it was already too late to mobilize the library profession behind the plan, especially in the light of opposition from the director of a major public library.

That leads me to an observation about the importance of not becoming isolated from your colleagues in other associations. As the earlier success of HEA Title II-C and the modest success in the Copyright Act of 1976 reminds us, we need the support not only of all librarians, but also of friends of libraries. We may well have become, as Jim Haas says, about the research librarian, "an aggregation of professions," each one with our own specialty, expertise, and interests. Nonetheless, on some matters of common interest, we need to act together and build on strength.

One more footnote on library legislation before I pass on to my final topic. Although I leave the discussion of ARL and LC to Bill Welsh, I certainly cannot omit from this recital a mention of the Bryant Memorandum on the Library of Congress in 1962. Our professional literature is strangely silent on this matter. Only the Wilson Library Bulletin gave it so much as a brief three-page summary. Yet I suspect that LC's responsiveness to the profession's bibliographic needs may have been significantly enhanced by publication of Douglas Bryant's Memorandum in the Congressional Record. (One of these days I am going to have one of my students do a paper on that topic.) In the early '60s there was substantial criticism of the Library of Congress by librarians and officials in government agencies like the National Science Foundation. At the request of Senator Claiborne Pell, Douglas Bryant, then Associate University Librarian at Harvard, prepared a hard-hitting memo on the role of the Library of Congress in serving the libraries of the country. Bryant included suggestions for major improvements in role, organization, and bibliographic activities. The Librarian of Congress asked that the memo be put on the ARL agenda for the June, 1962, meeting. At the Miami Beach meeting he asked for ARL suggestions and a list of priorities for LC from the Bryant memo. From the terse record of the Minutes, where a motion for the Board of Directors to consider the topic and adopt an ARL position at that meeting failed for the lack of a second, one can surmise that more was going on here than was ever brought to public attention.[10] Clearly, the memo focused the Librarian's attention in a marvelously constructive way.

When one turns to the topic of "library education," at least in the formal sense, he looks in vain for any direct ARL impact. Kaplan's assessment is correct in pointing to this neglect. Prior to the focus on "Education for Librarianship" at ARL's October, 1980, meeting, the only previous ARL efforts came to an end in the early '70s. An ARL Committee on Training for Research in Librarianship was appointed in 1966 and struggled to secure funding for a study of manpower needs. For several years this Committee, chaired by David Kaser, worked with the U.S. Office of Education and Rutgers University to launch a three-phase project to

address both training needs and directions for the future. Changes in personnel at USOE and Rutgers apparently doomed the project and the committee itself disappeared at the time of ARL's experiment with the "commissions" form of organization. Nonetheless, the Task Force on Library Education, formed in 1980 and now taking a hard look at the education of research librarians, could benefit from consideration of the outline of the earlier committee in its report.[11]

In order to keep ARL's neglect in perspective, one should remember that the library profession in the late '60s was just emerging from a period of staff shortages, that Title II-B funding had provided fellowships for recruiting at the master's and doctoral level which had been enjoyed only once before in the profession's history (the Carnegie Corporation grants in the '20s and '30s), many pinned their hopes on the disappointing Bundy-Wasserman study (funded by USOE), and the Asheim Library Education and Manpower statement (now the Library Education and Personnel Utilization statement) was in process and would be approved by ALA in 1970.

Nonetheless, the profession entered the decade of the '70s with a profound discontent with library education, not unlike, incidentally, the current unrest on the same topic. The editors of Library Journal, in the January 1, 1970, issue predicted "dissatisfaction will grow among a new breed of library school students, with resulting changes in the library school curriculum to include greater emphasis on the content of various literatures, the case method, and a return to some form of internship in the field."[12] Few predictions of LJ have been more on target. Curricula did change, new methods developed, and internships are very much a topic of conversation these days, and not just in the ARL task force.

Why didn't ARL have more impact upon professional education? One can only speculate.

The Association certainly did not ignore the problems of library personnel. The landmark Downs-McAnally article on the "The Changing Role of Directors of University Libraries," in the March, 1972, College and Research Libraries, the Booz, Allen and Hamilton Study at Columbia University, and the launching of ARL's Office of Management Studies focused attention on the internal problems of libraries which were largely related to personnel. Thus issues of governance (one of my own earlier concerns), staff development and utilization, management skills, and leadership training brought forth MRAP, communications networks, management consulting, and a host of other attempts to settle down the troops and get on with the research library enterprise. To quote Ellsworth Mason, it was a time of "off with the heads of heads," but subsequently many staff members complained that the damned director did not lead anymore.[13]

Yet I assure you that ARL exercised influence on library education, even if the Association itself was not directly involved in problems of the library training agencies. As a director-turned-dean, I can vouch specifically for the impact of ARL's publications programs. Our students read and studied ARL's Minutes, Newsletter, MRAP reports (when available), SPEC kits, and OMS studies. They also devoured ARL's statistical reports though ARL directors, like those in every other statistical gathering organization, often deplored the way in which such reports were used.

Moreover, the ARL group provides an obvious focus for research. Your libraries

are relatively homogeneous, the data from them are easily available, and your staffs are remarkably cooperative with students working on master's papers and doctoral dissertations. You often complained about the amount of time questionnaires took, you quarreled with the students' results, and you wondered whether anybody on the faculty understood either research techniques or research libraries. You said all these things, but you normally cooperated. Some of you then served on dissertation committees to keep the rest of us honest! The profession's growing research literature, often more neglected than used, is better for your cooperation.

Thus I would say ARL's indirect impact upon library education has been quite significant. No one who expects to practice in this profession can ignore ARL's contribution to bibliographic activities, to national policy formulation, or to personnel studies. Those contributions must be a part of any curriculum in a first-rate library school. One of the functions of a professional school is to develop critical thinking about the profession's overarching problems. ARL has frequently laid out the agenda for discussion of such problems at a very sophisticated level, as I have already noted.

In some ways, the ARL and the library schools face an old dilemma, characteristic of all social organizations: "How do we as professionals unite in a common cause while at the same time preserving our focus on a specialized area and enhancing the unique contribution our own institutions make to the general welfare?" Translated into the library educator's dilemma, I recently said the question becomes: "How can professional education provide the necessary theoretical base, develop some specializations, introduce the student to practice through an internship, and create a zest for learning that will cover a lifetime of changes?"[14] That question will never be answered to everyone's satisfaction because each generation has to address it in a different context. That ARL has chosen to take the lead in promoting the interaction of those who teach, practice, and research, and it seems to me to augur well for our professional future, yours and mine.

Do I have any words of wisdom from my look at ARL's past in the areas of librarianship, legislation, and library education? Other than urging you to continue your leadership role in policy making, I have just one: more attention to the user of your resources and services. As a librarian, I understand that your bibliographic and management and legislative activities are not for yourselves but for your users. That is not always apparent to them. We librarians have difficulty remembering why we create structures, devise organizations, and write standards. Perhaps the current moves in higher education to emphasize "outcomes measurement," "effectiveness indicators," and "the student consumer" will force us to re-examine what difference our libraries make in the educational and research process. New attempts to answer the question, "What difference does a college degree make?" is easily translated into a similar question, "What difference does a research library make?" One would hope that such re-examination might lead to the kind of public support necessary for continued viability of the research library community.

No one seems to me to have summed up our dreams better than Jim Haas did seven years ago in a speech on ARL and the Library of Congress. He ended his remarks with the hope that ARL could "in the year 1982, and on the 50th Anniversary of ARL, ... look about and see a sophisticated, reliable, effective and financially viable system for the identification and distribution of recorded

information—a system in which technology is effectively employed, social obligations are met, and public comprehension of our goals and efforts are clearly established."[15] As directors on the firing line, you may wonder if Jim's adjectives could be applied to any system for the identification much less the distribution of recorded knowledge. Struggles to keep our bibliographic utilities afloat make you painfully aware of the difficulties we face.

For my part, I do not despair. As a library historian, I am aware of how far we have come as library and information professionals. In our historical record, one can trace successes and failures, victories and defeats, but we are not a weak profession, despite the self-abnegation of which we are often, correctly, accused. With a healthy respect for achievement in the past and renewed energy to face the future, the Association of Research Libraries can continue to play a vital role—not just increasing the usefulness of services of research libraries, but also in providing leadership for your colleagues in other libraries.

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ARL AND THE LIBRARY OF CONGRESS

William J. Welsh
Library of Congress

MR. LUCKER: The third speaker this morning is Bill Welsh, Deputy Librarian of Congress since 1976. A native of Pennsylvania, educated at the University of Notre Dame, Bill has just received a service pin for 40 years of service with the Federal Government, most of which, of course, has been spent with the Library of Congress. His list of successive positions include Library Assistant for Postwar Program for Cooperative Acquisitions, Head of the Order Unit, and the Order Section and Division, Head of the European Exchange and Gift Division, Executive Officer of the Processing Department, Associate Director of the Administrative Department, Associate Director of the Processing Department, and Director of the Processsing Department.

MR. WELSH: When I was first asked to make a presentation on ARL and the Library of Congress, the task seemed to be an easy one. But I was a victim of my own optimism. Our history is a complicated but fascinating one. Certainly, over the past five decades, ARL has more than fulfilled its original charter that stated, "The object shall be, by cooperative effort, to develop and increase the resources and usefulness of the research collections in American libraries." Americans' penchants for associations often amuse our foreign friends, but this nation owes its preeminent position in library resources to the likes of the Association of Research Libraries and its early defenders such as Keyes Metcalf, Ralph Ellsworth, Archibald MacLeish, and many others.

The first major undertaking between ARL and the Library of Congress was the publication of the despoitory catalog in book form, the Catalog of Books Represented by the Library of Congress Printed Cards, up to 1942. At the time, this was a monumental gamble taken on by ARL. This led to the publication by LC of the tome Cumulative Catalog of Library of Congress Printed Cards. For the first time there was generally available, in convenient form, a publication which lists at frequent intervals a substantial segment of current American and foreign publications.

A 1948 ARL Committee on Research Libraries and the Library of Congress set the stage for the ARL/LC agenda for the next two decades. The Committee was to investigate and report on: 1) the bases on which the Library of Congress might make full sets of printed cards available without charge to United States libraries; 2) federal subsidy to selected libraries giving service to federal field offices; 3) cooperative cataloging arrangements; 4) the inclusion of catalog cards from other libraries in the Cumulative Catalog; 5) interchange of personnel; and 6) the role of the Library of Congress as an informational clearinghouse.

At the January 1949 ARL meeting, the committee reported on their progress: printed cards could be provided to regional depositories under certain conditions. The question of federal support to libraries serving federal field offices was currently insoluble in that any intelligent and well-coordinated plan would be hopelessly interferred with by the "logrolling of politicians." Cooperative cataloging was studied, and it was recommended that entries be simplified, and that

cooperative cataloging libraries revise and promulgate cataloging rules and deal with subject cataloging. The demand was present for the inclusion of catalog cards of other libraries in the Cumulative Catalog, but the cost would be so great as to make it impractical. The response to a questionnaire on exchange of personnel was far from unanimous, and the committee would consider it further. Finally, the role of the Library of Congress as an informational clearinghouse was still under consideration. During the March 1949 meeting, little progress was reported by the committee.

In November 1949, Luther Evans responded to the status of the assignments of the Committee on Research Libraries and the Library of Congress. On problem I, that the list of libraries that would receive full sets of cards was published in an October Information Bulletin. On problem II, federal subsidy to libraries giving extensive service to the federal field offices, Luther expressed his view that the government had an important responsibility for seeing that the country's leading scholars have easily available all the intellectual resources they require. He suggested that this responsibility might best be met by some system of federal grants to research libraries. Problem III, Cooperative Cataloging—an LC manual on subject headings—was in press. Luther Evans recommended that a standing committee be constituted to revise cataloging rules. Problem IV, the Cumulative Book Index was under way. Problem V, exchange of personnel should be done through bilateral agreements. Finally, the role of the Library of Congress as an information center needed further study.

Curiously, Luther concluded by recommending the committee be dissolved. The committee concurred in this recommendation and the Association granted the request. This may be the only standing committee ever dissolved by ARL.

In an attempt to acquire U. S. government publications which are not available through normal channels, the Library of Congress joined with 44 other libraries in the Documents Expediting Project. I would like to report that the situation today with respect to government publications has made the continuation of this project unnecessary, but I cannot. We now have 125 participating members.

The move toward better organization of Union Catalog activity began with ARL's insistence on coordination and standardization of long-run microfilming of newspapers. Standards were developed and the Library of Congress volunteered to establish in its Union Catalog Division a clearinghouse of information regarding long-run microfilm programs. As a first step, LC prepared and ARL issued Newspapers on Microfilm: A Union Checklist. In January 1956, The Library of Congress Catalog, Books, Authors, contained for the first time the holdings of other libraries. The July issue was renamed The National Union Catalog. ARL's persistence brought into being this major U. S. reference tool.

Throughout the 1950s, great effort was spent in improving foreign coverage in American research libraries. A Committee on National Needs was appointed by the Association of Research Libraries. Luther Evans, playing a vital role, wrote in his 1952 Annual Report: "Research libraries have a solemn responsibility to determine what informational needs may prove critical for our national welfare, or even safety, to define their responsibility for meeting these needs, and to take necessary cooperative measures as soon as possible." Recently at the Library of Congress we

conducted a symposium honoring Luther's memory, and I was reminded of what remarkable talents, especially in his commitment to a free world being dependent on knowledge, Luther brought to the national library scene at a time when freedom to read and speak were being seriously challenged. He was relentless in his dedication to worldwide acquisition.

With worldwide acquisition accelerated, the need to develop standardization of cataloging rules for foreign countries became more apparent. ARL, ALA, and LC joined together for a coordinated effort to obtain standardization and improvement of lists of subject headings. An internal Committee on Centralized Cataloging was established at LC in 1953, in response to a report on centralized cataloging prepared by Ralph Ellsworth.

The feasibility of using cataloging copy prepared abroad was begun with the implementation of the Public Law 480 acquisitions project. (Interestingly enough, the American Council on Learned Societies, led by Mortimer Graves, and the United Auto Workers Union, supported legislation and the ARL Committee on Shared Cataloging led in efforts to fund the programs.) The Library of Congress was authorized to use U. S.-owned foreign currencies to acquire for its collection, and those of other research institutions, and to catalog materials from countries designated as excess currency areas, including Brazil, Egypt, India, Indonesia, Israel, Pakistan, Poland, Spain, and Yugoslavia. Our initial experience with overseas offices would prove to be fortuitous within the next few years.

For the Library of Congress and the Association of Research Libraries, the 1960s would bring to fruition Charles Coffin Jewitt's plan for centralized cataloging and would see application of automated techniques to library operations. The so-called King Report, Automation and the Library of Congress, optimistically concluded that the automation of bibliographic processing, catalog searching, and document retrieval are technically and economically feasible in large research libraries. The die was cast.

Politically, no time could have been riper to launch the most gigantic and most comprehensive cooperative program ever attempted by the library world. Lyndon Johnson sat in the White House and controlled the Congress. Higher education became a popular recipient of federal funds, and the "educational industrial complex," as Congresswoman Edith Green later dubbed the Washington lobby, had a heyday, and fortunately for research libraries and scholarship in this nation, libraries had a piece of the action.

And action it was. ARL can be credited with the initiative of making the proposal in 1965 to the Congress to amend the Higher Education Act to give the Librarian of Congress responsibility for acquiring, insofar as possible, all library materials currently published throughout the world which are of value to scholarship, of cataloging them promptly after receipt, and distributing bibliographic information through printed cards or other means. William Dix, the distinguished Chairman of the ARL Committee on Shared Cataloging, outlined the advantages of such legislation before the Subcommittee on Education in the House. (I should note an aside here. I was attempting not to single out people because I did not want to run the risk of offending many friends, but someone in our midst today played a major role in the National Program for Acquisitions and Cataloging, and

that person is James Skipper. Thank you, Jim.) With Quincy Mumford's concurrence, the Congress approved the legislation and the National Program for Acquisitions and Cataloging (NPAC) came into being. John Cronin and Quincy can be credited with implementation of this gigantic task with considerable help and assistance from Sir Frank Frances and Josef Stummoll. Shared Cataloging became the subtitle of the program.

A conference was convened in London in January 1966, attended by the national librarians and the producers of current national bibliographies of England, France, West Germany, Norway, and Austria. It was agreed that it would be desirable for LC to use for cataloging purposes the description of books listed in the national bibliographies of those countries where bibliographies exist and that it was possible for the producers of the bibliographies to supply LC with copy of the entries prior to publication. A prototype operation was in place in London in June. Subsequently, offices were established in Austria, France, Norway, and West Germany, and regional acquisitions offices were opened in Brazil and Kenya. Eastern Europe was added to the list. What had been a dream for over a century took less than a year to put in place. Research libraries were asked to notify LC of their purchase orders and to provide information on materials currently received on an automatic basis to insure that LC would acquire and catalog materials promptly.

The 1967 Annual Report of the Librarian of Congress succinctly put the progress of the National Program for Acquisitions and Cataloging in perspective. I quote, "Fiscal 1967 was the first full year of operation for the National Program for Acquisitions and Cataloging. At its close the important publications of 21 countries and three continents were covered by NPAC offices in nine countries, subscriptions had been placed for the bibliographical services of 17 foreign institutions, and 92 American libraries were receiving sets of currently printed cards for about 150,000 publications a year."

Concurrent with the implementation of the NPAC Program, the Automation Committee of the Association of Research Libraries was working with the Library of Congress on a pilot project to develop procedures and programs for the conversion, file maintenance, and distribution of machine-readable cataloging data. LC invited participation in the pilot project, and 16 libraries, representing all segments of U.S. libraries, were chosen to participate. There was general consensus that what became known as MARC served a useful purpose. Encouraged by the enthusiasm of the library community, LC announced that a full-scale operation MARC Distribution Service was in the planning stage. Out of this experimentation and the interest expressed by the British National Bibliography emerged MARC II, the philosophy of which was the design of one format structure capable of handling bibliographic information for all forms of material and related records. Because of the magnitude of the task, MARC II was applied to one form of material at a time. In March 1969, distribution of machine-readable tapes for English language monographs began on a weekly basis. I am happy to report that MARC has now been expanded to include all languages except Japanese, Chinese, Korean, Persian, Hebrew, and Arabic languages. Thus, the products of the NPAC Program are even more readily available on a timely basis. MARC also covers most formats of materials as well as our authority files. I like to think that Charles Jewitt who first envisioned centralized cataloging, and Herbert Putman, who as you know was responsible for the implementation of the distribution of printed catalog cards,

would be astounded by our progress.

On occasions like this it is always popular to pat ourselves on the back and look at the accomplishments, which we indeed deserve to do, but at the same time, we as administrators and custodians of the nation's storehouse of knowledge, or citadels of freedom, whichever you prefer, have a responsibility to evaluate our shortcomings and find new and innovative ways to cross frontiers heretofore unknown. We have, I believe, two great challenges facing us in the remainder of this century. One is the preservation of the materials acquired with such zeal by our predecessors and the application of new technology to accomplish this, and second, I believe it is up to the members of the Association of Research Libraries to ensure that library professionals do not become mere information managers in an age when information dominates our economy. We have to do better than IBM, RCA, and Xerox.

I think the path to solving our preservation problems is analogous to that of acquisitions and cataloging. The ARL Committee on Preservation, formed in 1960, charged Gordon Williams and his committee with the task of analyzing the preservation problem and formulating possible solutions. Williams's report, "The Preservation of Deteriorating Books: An Examination of the Problems with Recommendations for Solutions," was adopted by ARL in 1965. It called for the creation of a federally supported central agency which would: 1) undertake the centralized preservation of deteriorating records deposited by libraries; 2) coordinate its own preservation program with local libraries to assure that all significant records are preserved while avoiding unwilling duplication; 3) assure the ready availability of microform or full-sized photocopies of deteriorating materials to all libraries; and 4) preserve, in the interest of textual preservation and the ready availability of copies, all microform masters made at its expense or deposited by others, and coordinate the preservation of microform masters made by other agencies. LC, with a lot more optimism than warranted, committed itself to establish a national preservation program. 1967 did see the Brittle Book Project done in cooperation with ARL, LC, and CLR. The conclusions of that study were equally rosy—there appeared to be no barrier to the establishment of a national program to identify best copies of deteriorating materials for preservation.

Without being too harsh on LC and ARL, the Williams Report did provide a blueprint for a national program, but in 1967, LC was in no position to head a national program in either a direct or an advisory capacity. Our own shop had to be put in order. Over the next several years, LC did establish a preservation laboratory, a preservation microfilming office, and a reconstituted restoration office with a unified preservation budget. The Preservation Office has a staff of a little over one hundred.

Even now we cannot claim a national program, but the research and testing office's efforts will accrue benefits for all libraries. You will be hearing this afternoon about a diethyl zinc program that may do for preservation what NPAC did for acquisitions and cataloging. With the advent of optical disk technology, coupled with mass deacidification efforts, we may be on the threshold of success. I believe our cooperative efforts have led us to this point.

I need not tell this august body that despite our dependence on a technology, we must not let it overwhelm the profession of librarianship and our true mission to

make knowledge readily available. We see many attempts, both nationally and locally, to reduce the profession to "information brokers" with no respect to the content of our collections or for the long-held American tradition of free library service. Each of us can readily name over a dozen librarians whom we have personally known who are prominent scholars in various subject specialties; many of them became so in our libraries. These individuals took great delight in sharing their knowledge with whomever ventured into their library. We need to foster the intellectual development of members of our staff and their commitment to the importance of scholarship. We need to reinforce the vocation mentality of the past. Technology cannot replace subject specialty, but rather should enhance that specialty. Our profession must continue to respect scholarship and the free world's absolute dependence on knowledge. We are going to have to be our own press agents if we are to overcome being folded in with the information industry. We are going to have to prove to a wide segment of our population that "cost effectiveness" is not always easily measured in the world of scholarship. Many times the dividends are a long time coming.

Finally, whatever agenda we set for ourselves in the remaining years of this century, we know that continued cooperation, as well as the sharing of our intellectual and physical resources, will be a necessity. I do not think we should be prophets of gloom and doom, but I do believe that we have to face realistically some difficult times. On the lighter side, we need to remember that ARL emerged during a period of depression in our country and yet its goals have been exceeded by the wildest of expectations. We owe much to the illustrious group of research librarians whose faith, hard work, and dedication brought about phenomenal change during the past half century. We have built a strong foundation from which to grow.

Long live the ARL and LC.

NORTH AMERICAN PERSPECTIVES ON ARL

Marianne Scott
McGill University

Mr. Lucker: Our fourth speaker this morning is Marianne Scott. Marianne is a native of Toronto, Canada, and graduate of McGill University. She has held several positions in the libraries at McGill and since 1975 has been Director of Libraries there. McGill, incidently, is one of two Canadian libraries which are founding members of ARL; Toronto is the other. Marianne has served as Vice President and President of the Canadian Association of Law Libraries and of the Canadian Association of Research Libraries. She is currently President of the Canadian Library Association. It is a great pleasure to introduce Marianne Scott.

MS. SCOTT: It is a great pleasure to participate in this 50th anniversary program of ARL. This has been my week for anniversaries; last Saturday I attended the 50th anniversary of the Quebec Library Association. An anniversary celebration combines two things: first, it provides an opportunity to meet with old friends and remember happy or, as some say, "interesting times." Perhaps more importantly, it provides the occasion to pause, reflect, and assess the situation—to review successes and failures.

In Canada we tend, I think, to be a little schizophrenic about our relationship with the United States. On the one hand we copy and emulate you and, on the other hand, we strive to maintain our "Canadian" image, to develop "Canadian ways" of doing things and show how we are different. However, in the world of libraries—with the exception, perhaps, of certain bureaucratic problems like tariffs and custom delays—we have managed to ignore the world's longest, undefended border, the one between Canada and the United States. We have achieved, I believe, what could be called a North American librarianship. The developments that have taken place in the United States have been of enormous assistance in the advancement of librarianship in Canada.

It is trite to say that we, like many parts of the English-speaking world, rely heavily on the leadership provided by the Library of Congress. There are many other institutions and associations which tie our libraries together and ARL is certainly a prime example of this bond.

Having pointed out how much we have in common, I would like, however, to highlight one major difference between us which, I believe, has affected the development of research libraries in Canada. I am referring, of course, to the division of powers between the federal and provincial governments with respect to education. When the British North American Act was passed in 1867, the prime responsibility for education was vested in the provincial governments. During the more than 100 years since that date, the provinces have jealously guarded their rights in this field. While this probably has affected education at the elementary and secondary levels to some extent, in the area of post-secondary education this fragmentation of responsibility has clearly slowed our development.

In Canada one could almost say education is a moving target and, because of provincial rights, it is very difficult to tag anyone at the national level with questions relating to educational responsibility. When there is an issue associated with higher education in Canada, we have no agency such as the U. S. Department of Education to approach. All we have is a council composed of the provincial Ministers of Education who meet to exchange information and discuss current issues. Historically, the provinces have autonomy in educational matters and, in spite of attempts to develop a national policy for higher education, it is still a very complicated issue in Canada. It is difficult for the federal goverment to provide financial assistance to the universities and to their libraries. One sometimes wonders, albeit somewhat cynically, if the situation, in actual fact, provides a convenient way out, a rationale for not getting involved. In spite of this, during the first half of the 20th century, our research libraries did develop, however slowly, and largely in isolation.

As some of you may know, one of the favorite occupations in Canada is a Commission of Inquiry, and, after one of our most famous commissions, the Royal Commission on National Development in the Arts, Letters and Sciences, chaired by the Right Honourable Vincent Massey, it became obvious that something had to be done by the federal government to ensure major growth for Canadian universities. As a result, in the 1950s a plan was developed for direct grants from the federal government to the provinces for the universities. After about 15 years, this direct federal aid was stopped. Today, through a system of transfer payments, money flows from the federal government to the provinces and the intention is that it be used partly for higher education; however, the direct connection between the federal government and the universities has been severed.

I do not want to dwell unnecessarily on finances; nevertheless, money, or lack of money, inevitably plays an important role in library development. In Canada we not only had to face the problem of the difficulty of obtaining direct funding for university library development from the federal government, but also the lack of major granting agencies. In fact, there have only been two major sources for additional funding to the library community and these have followed one another; they did not occur at the same time.

The Canada Council, which was established in 1956 to foster the development of culture in Canada, arts in particular, acted as a bridge between the federal government and the universities and, as a result, research funds were channeled to the universities for the humanities and social sciences. For a three-year period between 1966 and 1969, Canada Council introduced a program of support for university libraries which enabled them to acquire a considerable amount of research material. In total, some three million dollars was granted to libraries across the country.

In 1979 a new council was established, the Social Sciences and Humanities Research Council, which is now the granting agency for two programs to support research libraries. One of these, the Program for the Strengthening of Specialized Collections, provides grants for one to three years for adding to specialized collections of national significance. The other, known as the Fleeting Opportunities Program, is very important as it enables libraries to apply for a grant to acquire material which has come on the market unexpectedly. One has to

compliment the Council because they have developed extremely good procedures for expediting the Fleeting Opportunities Program applications. The government can, of course, provide support for our research libraries by generously funding the National Library of Canada (NLC) and the Canada Institute for Scientific and Technical Information (CISTI). Projects relating to technological development, collections, and expanded services for the two national institutions are an indirect subsidy to the research libraries. One often wishes that the Federal government would expand these programs and projects as a way of further assisting us.

The earliest Canadian universities were located in eastern Canada. In spite of the fact that a number were established before the turn of the century and included some form of library, the growth of both the institutions and their libraries was very slow until after the Second World War. Geoffrey Briggs, from Carleton University Library, has written an article, "The Development of University Libraries in Canada", which has been included in a collection entitled University Library History, an International Review, published in 1980. His article includes interesting data about the early development of Canadian university libraries, a rather sad and pathetic situation. Clearly, libraries were not a high priority for many of those responsible for the establishment of the universities in Canada. Until the '60s, the university libraries received only a paltry share of the university budget, and were frequently felt to be an area which, in times of shortages of funds, could be ignored.

To set the stage a little, here are a few interesting statistics about the size of the collections of Canadian research libraries in the early '30s as compared with the end of the '70s. These statistics are intended to highlight the slow growth of the first 75 to 100 years. The name of the institution is followed by the founding date, the approximate size of the collection circa 1930, and in 1978.

Name of Institution	Founding Date	Circa 1930	1978
McGill University	1821	411,000	2,208,000
University of New Brunswick	1829	28,000	1,465,000
Queen's University	1841	130,000	1,904,000
University of Toronto	1850	252,486	5,000,000
Laval University	1852	180,000	1,527,000
Dalhouise University	1863	84,000	1,078,000
University of Western Ontario	1878	91,324	2,122,000
McMaster University	1887	31,600	1,784,000
University of Alberta	1908	35,000	3,090,000
University of Saskatchewan	1909	51,013	1,751,000
University of British Columbia	1915	85,000	3,885,000

Like the United States, we had a period of rapid expansion starting in the 1950s and continuing to the end of the '60s. As a response to the returning veterans of World War II, which was followed by the baby boom, existing universities expanded, new universities were established, and some colleges were converted to advanced degree status. For example, in 1960 there were 31 universities and colleges; by 1970, this number increased to 105 and the number of faculty members tripled.

While Canada experienced the same type of growth during this period, there was a lack of strong organized leadership for research libraries in the form of a national association, or a Canadian equivalent to the Association of Research Libraries.

While the American Library Association (ALA) was founded in 1876, the Canadian Library Association (CLA) was founded some 70 years later, in 1946. The Library of Congress, although not a national library by mandate, was part of the basic structure of the U. S. government, and has played a major role in the development of American research libraries. After CLA was formed, one of the first initiatives was to campaign for a national library. The NLC was finally established in 1953, but did not occupy its own building until 1967.

As I mentioned, Canada did not have an ARL to bring together the leading people in the research library community to discuss problems and to provide leadership. For example, the Farmington Plan, with all its trials and tribulations, was a magnificent, coordinated effort of the Library of Congress and the research libraries which added to the resources to your libraries. So, the great period of expansion of Canadian research libraries from the low period in the '30s to the end of the '70s was achieved without much coordination. The NLC and CISTI became increasingly effective in the mid-'70s.

Before reviewing the roles of the NLC, CISTI, and the Canadian Association of Research Libraries (CARL) in this development, I should like to pay tribute to a few great Canadian university librarians. I would like to mention Robert Blackburn of the Univeristy of Toronto, Bruce Peel of the University of Alberta, and Basil Stuart-Stubbs of the University of British Columbia. While they undoubtedly communicated with one another, and worked together in ARL, there was no organized leadership in Canada. All they had was their ability, ingenuity, and a goal. Their goal was to create for their respective universities research libraries capable of supporting graduate and research programs; in effect, to respond to government policy to strengthen Canadian universities so it would be possible for Canadians to do post-graduate work in Canada.

I think a factor that is still affecting Canadian universities is that the majority of faculty did their graduate work in the United States. It has only been in the last few years that the junior faculty who have obtained their advanced degrees in Canada have come on board. When we look for a role model, it is still the research libraries of the United States. For example, one never says that McGill should be like Queen's, or like UBC, one looks to Yale, or Northwestern, or some other American institution. I want to share an anecdote with you. I was having a small problem with a humanities professor in introducing our COM catalog. He became quite upset and asked who else had this system. I reeled off all the Canadian libraries. His reply was, "That doesn't matter. What major American libraries have COM?" That happened just last week!

It was one thing to expand physical facilities, to greatly increase the number of faculty, but surely it was another thing to have such rapid growth in university libraries. At the best of times, it requires a good deal of time, information, and specialized staff to develop a balanced collection to support a variety of programs and, as we all know, this is just the beginning. There are a variety of actions which must be taken before those materials are acquired, sometimes with great difficulty,

and made ready for use. During the period of rapid growth, in addition to organizing the collections, our staff were also helping to design buildings to house the materials. It was a monumental task indeed, particularly for the two newer universities—the University of Alberta and the University of British Columbia—which had spectacular growth over a 25-year period. As a result, these are now, with the University of Toronto, the top three research libraries in Canada.

In spite of the fact that we have these three excellent research libraries and one or two others, including McGill, the fourth largest, which have collections adequate to support graduate research, the development and the rapid growth of the '60s for the most part resulted in the duplication of basic collections. The majority of college and university libraries have good-to-excellent undergraduate collections and, as I mentioned earlier, a few good research collections also developed. Unfortunately, there was still much to do when funds started to dry up in the mid-'70s. This prevented further growth of research collections and has left us in a relatively poor situation. It is true that, following the Bladen Commission on the financing of higher education (a study commissioned by the Association of Universities and Colleges in Canada) universities began to devote a larger percentage of their budgets to libraries, and grants from the first program of the Canada Council helped to enrich the library collections; nevertheless, the period of growth stopped too soon for us because we were so far behind. I think that a small quote from Geoffrey Briggs' article sums it up very well.

> When the history of Canadian university libraries is written at the end of the century, we may find the exhilarating growth of the sixties was an aberration enjoyed by those who experienced it, envied by those who came after it.

The two institutions which, I believe, are having the most effect on the development of our research libraries today are the NLC and the Canadian Association of Research Libraries (CARL). The former had been conceived of as long ago as 1883 but was not established until 1953. There has been some speculation that one of the reasons that there was never a greater push for the establishment of a national library was because we did have such effective and close cooperation with the library community in the United States and, in fact, relied more than we really should have upon American generosity.

Another reminder of the cooperative relationship between libraries in Canada and the United States is the fact that the first major study in 1933 on the Canadian library situation, chaired by John Ridington, was funded by the Carnegie Corporation. Since that time there have been a number of studies, reports, and assessments of the library situation, including important contributions by your colleagues—the Downs Report, the Williams Survey. I think I should mention that the very first time I met one of today's panelists, Stephen McCarthy, was when he came to McGill University in 1960 to survey the McGill University Libraries. This was indeed a turning point for us.

Basically, all of these reports came to the same conclusion—Canada had a problem. We were a huge country, sparsely populated, with a basic east-west orientation. We were short of books, and our libraries needed more financial support. It was clear, when the NLC was established, that it was then probably too

late for it to become a great research library. As a result, the concept of sharing resources was uppermost in everyone's mind.

The first goals in the mandate of the new NLC were to compile and maintain the National Union Catalogue, to publish a national bibliography, and then to build a collection for the library. As a result of the late start of the NLC, it is evident that technical support and coordination of activities has taken precedence over the development of a collection; not to suggest that collecting books has not been an important activity. A top priority has been to find out what materials we have in Canada and their location, then to develop tools to make these resources available. These goals are being successfully achieved, and following the report of the National Librarian, The Future of the National Library of Canada, in 1979, new directions have been outlined for the National Library. The report accentuates the continuation of the original objectives and places new emphasis on technical support for libraries in Canada. It is this area which, of course, is of great importance to research libraries. The recommendations include,

> The National Library develop, in cooperation with other institutions managing computerized bibliographic centers, a decentralized bibliographic network with a view to ensuring the fullest sharing of information and library materials in the most cost-effective manner by Canadians everywhere.

Another important objective for the NLC is the funding of research and development studies and pilot projects prior to the proposed nationwide library network. It is interesting to note that CARL, in examing the recommendations of the National Library Review Team, felt that, while the Union Catalogue and the publication of Canadiana had equal importance, high on its list of priorities for the NLC was "leadership in Canada's library community." To quote from their brief:

> It is most important that the National Library should not isolate itself. On the contrary, it must assume a role of constructive leadership through frequent and frank exchanges of views, through positive relations with all libraries and through real action within the framework of federal-provincial relations. Other countries with political patterns similar to Canada's benefit from activities and leadership of central, national organizations. This occurs whether it is their national libraries or other similar organizations which foster national library policies, cooperative schemes or coordinated activities.

It is probably time to make a few specific remarks about the youngest or most recent influence on the development of research libraries in Canada—the Canadian Association of Research Libraries. This association has not had a very long history and, somewhat similar to ARL, CARL was first organized or talked about as part of our national association, CLA. In fact, it was at a CLA meeting in February 1970 that an informal ad hoc group of chief librarians met and concluded that there was a need for coordination and cooperation among Canadian research libraries at the national level. They went so far as to say that the situation had reached emergency proportions, that all talk must stop and some action must follow. An ad hoc committee was appointed to prepare a proposal and the committee planned to meet and discuss the proposals at the June 1970 meeting of CLA. As usual, it took longer

than expected, and the work of organizing the group took most of 1970. In their review, it was felt that a nucleus of members to identify those problems unique to libraries supporting research would be useful. It was also perceived that there were a number of other specific problems to be solved, not necessarily relating only to research libraries.

In reviewing some early documents, there is great similarity to the type of discussion that must have gone on in the early days of ARL. It was felt that this was going to be a research-oriented group and that the establishment of such a small specialized group should not in any way detract from any institutional membership in CLA or the Canadian Association of College and University Libraries (CACUL), a division of CLA to which most of the potential members belonged. The group recognized the fact that, while they would be addressing problems primarily from the academic research library point of view, they must recognize their continuing responsibilities toward regional, public, and special libraries. There was also a critical need for a national mechanism to identify research and development projects and to ensure that appropriate people with the required expertise were free to work on these projects. The new group was perceived as being able to encourage the necessary momentum within their own institutions and then to act as a vehicle to diffuse the results. One of the most pressing problems at that time was the development of automation in Canadian libraries, and there was concern that this might be delayed unnecessarily if the appropriate expertise could not be rallied. The group also felt that it should support the initiatives of the National Librarian.

It was during 1969 that the NLC accepted responsibility for the coordination of library resources in the nation and for the development of a machine-readable Union Catalogue of these resources. There was also the whole issue of collections coordination. This is something we have been talking about in Canada for many years, as have librarians everywhere, yet there is no viable solution. However, in 1970 the new group was talking about responding to the National Librarian, who had suggested that Canada should consider the possibility of a Canadian Farmington Plan. This had been discussed in one or two surveys which emphasized the lack of resources and the accelerating need to provide for the academic programs and research going on in Canada.

From 1970 to 1975, CARL continued to meet once a year during the annual meeting of CLA and sometimes more often. As in the early days of ARL, it provided an organized forum for the directors of research libraries to meet and discuss issues and communicate problems, but it did have difficulty taking any specific actions. Part of the problem was the fact that it was under the umbrella of a division of CLA. In 1976 a new Canadian Association of Research Libraries was formed. Membership in the Association was open to "the library system of a Canadian university which has graduated doctoral candidates both in the arts and social sciences, and in the sciences." No further criteria relating to budgets or collections were stated. CARL also invited the two national organizations, the NLC and CISTI, to join, as well as the Bibliotheque Nationale du Quebec (BNQ).

The objectives of CARL are to represent the common interests of university libraries which have responsibility for providing resources for post-graduate studies and research. CARL was fortunate because, shortly after it was established, it had a major focus in having to respond to the report of the National Library's Review

Team and the Five-Year Report of the National Librarian, which I mentioned earlier. A focus such as this in formative years can be very productive.

In 1977, Canada Council convened a Consultative Group on University Research Libraries to examine the problems of collections in research libraries. Several members of CARL were invited to participate, and Dr. Hans Moller, who was at that time President of CARL, was appointed chairman. As a result of the work of this group, several recommendations to Canada Council were formulated. Two of them were accepted and are now having a major impact on library development. The first was a proposed project to transfer pre-1900 Canadiana to high quality microfiche and to make the collection available to all libraries at a low cost. Surveys and reports had confirmed that good collections of Canadiana do not exist in Canadian libraries, and what does exist is rapidly deteriorating. I am pleased to say this project is well under way and most libraries subscribing to the set have received two of the projected total of five parts on microfiche.

The second recommendation was to provide funding for specialized collections of national significance and to enable libraries to acquire valuable collections that might suddenly appear on the market for which there would be no money available; that is what I referred to as the "Fleeting Opportunities Program." A third proposal to the Canada Council, for a National Lending Centre for Periodicals, is in a state of limbo. As one can easily understand, there has not been total agreement in the Canadian library community on the shape such a center should take.

To return briefly to CARL, we have 30 members: 27 academic libraries, the NLC, CISTI, and the BNQ. Our chief goals, beyond communicating with one another, are to support and work with the NLC and CISTI to improve, both collectively and institutionally, service to the academic community. This includes some constructive criticism from time to time. CARL lobbies the federal government on issues such as copyright, postal rates, and financial support for our national institutions and granting agencies. Recently, CARL has tried to encourage the Science and Medical Research Councils, who give grants for research to universities, to provide funds for science collections. CARL also collects, on an informal basis, statistics on collections, budgets, salaries, etc. The Association is quite concerned about working conditions, term appointments for directors, and labor agreements. We are fortunate the CARL is still small so that we can continue to benefit from round-table discussion at our meetings.

ARL has been and is important to its Canadian members. Representing a charter Canadian member, I feel I am in a position to comment briefly on this relationship. As stated at the beginning of my presentation, there is really no U.S./Canada border as far as librarianship is concerned. We share resources—human and written, technology, and information. It may be in the future that some new arrangements will be developed for Canadian members, but I sincerely hope the rationale is not based on ARL's size or the strength and viability of CARL, but rather the appropriateness or lack of appropriateness of Canadian participation in certain aspects of ARL activities. For example, those dealing with relations with the United States government, granting agencies, and legislation.

There are still so many challenges ahead—the problems of academic libraries in the '80s will be the same on either side of the border, less money, greater needs to

meet, fast changing technologies. Because of these challenges, it would be a waste of time and effort for CARL to try and duplicate all ARL does—the surveys, statistics, technological investigations, publications, and the Office of Management Studies. It is true that CARL is a little nationalistic; we may need to be because our members are so few. We take pride in our Association, we work hard for it to achieve the things only a Canadian-based organization can, but in all those other areas our true strength is as North American libraries, and ARL has provided an excellent forum for all of us to work together to solve our common concerns.

CHANGING SCHOLARSHIP: THE CHALLENGE TO LIBRARIES

Introduction

MS. ABELL: It is my pleasure to introduce the chair of this morning's program, someone who is a very old friend and colleague from whom I have learned a great deal, and from whom we will learn even more today—Charles Osburn.

MR. OSBURN (University of Cincinnati): Thank you, Penny, and good morning.

In the latter part of the 20th century, it appears that society grows ever more dependent upon the information and knowledge generated by research. There are statistics to demonstrate the critical position of the academic contribution toward this effort, and the Membership of this 50-year old association is highly sensitive to its key role in the cycle of providing information that leads, through research, to the creation of new information and then new knowledge.

It is worth noting that the massive research effort we ARL directors strive to support in North America is increasingly essential to the survival of our species on several levels, for that research is intended to help human kind understand itself as thinking, feeling, expressive individuals, to help it understand itself collectively as social beings and to help it understand—and then to use to human advantage—the natural environment.

In the process of supporting research we manage, by definition, service organizations, and in a complex society that is changing as rapidly and deeply as ours now is, we would do well to sharpen our vigilance of those whom we serve so that we can be proactive rather than just passively responsive in our provision of service to scholarship.

For many reasons, most of which have been addressed in the course of the past few days, the Association of Research Libraries has arrived at a plateau in its evolution. It has focused considerable attention on predominantly internal library matters heretofore, an emphasis that evidently reflected membership needs. But the time may now be ripe to place more emphasis on regularized relations with the scholarly community we serve, and on its own particular dynamism, for this certainly must constitute the ultimate challenge for the research libraries of North America.

In this spirit, we have invited three guest speakers to address us on change in the motivation, goals, and processes of scholarship, in three very broad areas: the humanities, the social sciences, and the sciences.

At the outset, let me note that our distinguished guests wish it to be perfectly clear to all present, that they make no claims of expertise in librarianship, nor even in the broader areas that I have asked them to represent. You will see, however, as I introduce each of them, that they are equally at the cutting edge of their fields and keenly aware of the general development of research in those fields.

THE CHALLENGE FROM THE HUMANITIES

Ralph Cohen
University of Virginia

MR. OSBURN: Our first speaker is Ralph Cohen. He is Kenan Professor of English at the University of Virginia and founding editor of the journal, New Literary History. Professor Cohen took his M.A. and Ph.D. degrees at Columbia University. Prior to going to Virginia, where he is a member of the Center for Advanced Study, he taught at UCLA from 1951 to 1967, and has been a visiting professor at many, very many, major universities throughout the world.

Professor Cohen has received many awards and honors. He is a Ford Fellow, Guggenheim Fellow, and an ACLS Fellow. He has held several distinguished professorships. He is President of the Academy of Literary Studies, and past president of the Conference of Editors of Learned Journals. Professor Cohen has far too many publications for me to mention. They are primarily in the fields of literary theory and history, his most recent book being New Directions in Literary History, published by the Johns Hopkins University Press in 1974. He is, as I said, editor of New Literary History, was associate editor of the Journal of Aesthetics and Literary Criticism from 1973 to 1980, and he is on the editorial boards of a number of other learned journals.

It is with considerable honor that I present to you Professor Ralph Cohen.

MR. COHEN: My remarks are directed to the changes in the study of humanities, especially literature, in the next decade and the effects these changes may have upon research libraries. No matter what changes take place, it should be noted that many scholars will continue to work within the present boundaries and remain resistant to new problems and formulations. Perhaps it is only fair to say that their continuity helps us to detect the discontinuities.

The new directions of humanistic study will, I believe, make considerable demands upon research libraries in terms of changes in the concepts, equipment, and materials. The concepts that have for many years governed research in the humanities, especially literature, include a canon of books worthy of study and exploration, the relation of these books to the historical contexts, the belief in individual authorship of these books, and the belief that these books constitute a sound basis for, in the words of the Commission on the Humanities, "the disciplined development of verbal, perceptual, and imaginative skills needed to understand experience." As for the fields encompassed by the term "humanities," the Commission identified languages and literature, history, and philosophy as the "central humanistic fields." My comments, however, shall be derived primarily from my own field of language and literature.

This field is undergoing conceptual changes though these have not yet ousted the older governing concepts. Rather they exist alongside them, and one of the most obvious examples of the conceptual change is in the vocabulary of criticism — the terms "book," "literary work," have been replaced by terms like "text" and "writing" in order to avoid the metaphysical implications of wholeness and

progression. The canon of books worthy of study has now been surrounded by a body of texts formerly ignored or overlooked. In contemporary scholarship the relation of book to historical context has been undermined by a view that avoids the division of writing into literary and nonliterary texts. As Harold Bloom puts it, there is no difference between fictional and critical text. So, too, the notion of a "historical" context is being replaced by a notion of "historical consciousness" because all human actions—and literary texts are considered forms of human action—all these are considered historical in their very existence.

As for individual authorship, the concept has been advanced that individuals are shaped by their communities and thus a text is inevitably a consequence of communal behavior. As for the aims of the humanities, that aim of "understanding experience" has been interpreted as a class aim, as imposing ideological views upon readers, not providing some neutral or so-called objective skills to "understand experience."

To what new directions in literary studies do these conceptual changes lead? The canon of books has been changed as a direct result of changes in society, especially towards the role of women and blacks. Texts by women have been introduced as forms of gender consciousness and study. The Brontes have, of course, been a part of the canon for some time as is the case with Jane Austen, but Aphra Beha, Kate Chopin, Susan Glaspell, and a host of other women writers have now been made part of literary study, and they are accepted figures for further research. So, too, as a result of programs of black studies, works by African as well as American black writers have been introduced into the curriculum and made acceptable for research. This means that library collections will have to be enlarged and that works once considered ephemeral will have to be reclaimed as research materials.

The expansion of the canon and the revision of the curriculum were also the consequence of educational changes aimed at undermining an elite view of education—responsive to the desires of as well as needs of the community at large, courses in popular literature have been introduced. These courses seek to offer an alternative to Matthew Arnold's dictum that the aim of liberal education is to study the best that has been thought and written because this "best," it is held, refers to the interests of a particular class and its desires. Rather, popular culture as an area of study and research seeks to understand and explain how writing functions to give pleasure and ideological direction to the lower classes, those to whom Spencer or Milton or Wordsworth provide neither pleasure nor nourishment for the living of their lives.

Popular works such as ballads and broadsides long ago entered the literary canon of works that might be respectably studied, and there even developed a discipline—folklore—that taught these materials. So, too, conduct and courtesy books were considered—albeit by historians rather than literary scholars —appropriate for research. But cheap paper romances, 19-century rags-to-riches success stories, westerns, detective stories, children's literature, have until recently been excluded from university study. But not only does there now exist a scholarly Journal of Popular Culture, but a number of scholarly studies of popular culture have recently appeared, and Dashiell Hammett and Raymond Chandler have now achieved academic respectability. Courses in romances or the detective story are no longer strangers to the curriculum.

It is not merely that in 1976 Lewis James of the University of Kent published an anthology called English Popular Literature 1819 to 1851 and that in 1977 Victor Neuberg, a British librarian, published the Pelican original called Popular Literature, a History and a Guide, but that eminent scholars such as Robert Weimann and Ronald Paulson have turned to this field: Robert Weimann in Shakespeare and the Popular Tradition in the Theater (1978), and Ronald Paulson in Popular and Polite Literature in the Age of Hogarth and Fielding.

The difficulties for librarians of selecting, collecting, and storing what has been considered expendable materials are going to be serious. Much of this material is now unrecoverable, but its value for study and for the understanding of our so-called high culture should not be underestimated. These writings help shape popular attitudes and stereotypes, and in the little research that has been done on these materials, it is apparent that in England, for example, they provided the provinces with ideological views that were the objects of ridicule in the urban centers.

The study of popular culture is, of course, considerably encouraged by the present publication of paperbacks in our country with their exploitation of sex, romance, mystery, and other popular themes. Serious research is only just beginning to inquire into the production, distribution, and the audience of popular fiction. The changing nature of library holdings will include comic books, comic strips, and newspaper ads, for in this latter category, Marshall McLuhan set the model in The Mechanical Bride.

I have been enumerating some of the changes in research resulting from changes in concepts governing the aims of humanistic study. And I have indicated that these will affect the size and kinds of collections. I want now to turn to another group of studies that involve changes in equipment leading to changes in literary study and library procedures. I refer to the technological revolution in which we are all involved. This technological revolution pertains to computer and duplicating procedures on the one hand and television and film media on the other. Computer technology has had relatively little impact on the humanities thus far, but it has altered and will continue to alter the shape of research library services. Computer technology makes possible the storage and retrieval of masses of information. At present there exist computer programs for the wholesale production of concordances, and Cornell University has produced a considerable number of these. It is not necessary to speculate that the quantitative approach to literary study will, in time, reveal connections within texts and among the texts that will change the caliber of true literary scholarship, whether this pertains to the probability of identifying an author's true text by identifying his vocabulary and sentence construction or to understanding the hierarchy of words in his vocabulary.

The stylistic study of Michael Riffaterre, for example, relies on the study of common period vocabulary, and this can most readily be discovered through computer techniques. Indeed, any stylistic study which aims at generalizations based on quantitative study can best be achieved by computer technology. Though here, again, one must note the role of research libraries in helping to establish short-title catalogs of all available works—as in the efforts now being undertaken to set up an 18th-century short title catalog. One can point to the immense help research libraries may be able to provide when they can offer researchers a printout of all recent articles on a single subject or a list of all the works

of a single writer with locations of these throughout the world.

In another sense, information technology will serve to make humanities research an international enterprise. The report of the Commission on the Humanities stressed the need for the elimination of constraints on world-wide bibliographical information. Such information crosses national boundaries, and the study of comparative literature requires such access.

Technological developments have made the collection of oral materials possible, and thus libraries will be able to store regional songs, stories, and histories. Research library personnel will be expected to assist scholars in preserving and using new materials. And collections will also include scripts, working scripts, and films.

There is developing in universities throughout the country a study of motion pictures—or as it is referred to in university catalogs—film courses. There are, of course, some special libraries like that of the Museum of Modern Art in New York or the film institutes in Washington and California, but this study is international in scope and interdisciplinary in nature. Research in this area is burgeoning, but the cost of purchasing and reviewing films presents special problems. For example, will it be possible to make such materials available for transmission as books are? Can libraries afford to provide film machines as they do microfilm readers? Perhaps research libraries must draw the line at the materials they purchase and films should be confined to special libraries.

The study of films and their insight into the relation between the arts of writing, photography, and acting have led a number of philosophers and psychologists to study them: Rudolph Arnheim, Stanley Cavell, Alex Sosonski, Marshall Cohen, Siegfried Krakauer. The film, like the comic strip, involves words and pictures, and studies in the interrelation of the arts, interdisciplinary studies, represent major areas of new research now being undertaken in the humanities. The rationale for this research is the development of semiotics—the study of sign behavior. This area of inquiry has made it possible to consider verbal and nonverbal behavior within the same system. Thus a literary text and other forms of behavior are analyzed as parts of a common system governed by a theory of signs. In the work of Thomas Seobeck, of Umberto Eco, of Yury Lotman, the study of literature is merged with that of social and ritual behavior. Indeed, it is sometimes difficult to tell the difference between studies in different disciplines—as, for example, a collection of essays on metaphor by the anthropologist David Sapir and Christopher Crocker—The Social Use of Metaphor—and a symposium on metaphor published in New Literary History.

Anyone familar with research in the humanities is cognizant that it has become increasingly interdisciplinary. Literary study, for example, involves psychonalytic premises in the work of Murray Schwartz, Norman Holland, and others. It involves economic and sociological premises in such works as Fredric Jameson's, The Political Unconscious or Terry Eagleton's Criticism and Ideology. It involves phenomenological premises in Geoffrey Hartman's Wordworth's Poetry 1787-1811 or James Swearingen's Reflexivity in Tristram Shandy. I could go on to pursue the interrelations between literary and art study, between the history of literature and the history of science, between religion and literature. But my point is that research libraries will need to reassemble their collections so that key works from

nonliterary fields will be available to scholars who are working on literary problems. I realize that this is no simple matter, but it does indicate the need to rethink how best to serve the scholar in consequence of new concepts governing literary study.

I have been discussing some of the changes in scholarship that will lead to changes in library collections and procedures. I am aware that the expansion of resources is an age-old library problem, but I think that changes in scholarship are pointing to more than space within the old boundaries. The very nature of humanistic study will involve, as I pointed out, new interrelations of materials. Whether this means that we need special humanities libraries rather than special English or Philosophy libraries, or whether this means that anthropological and literary materials will need to be cross-indexed—my point is that some new thinking on problems of classification and accessibility will have to be undertaken. You know more about how to manage this than I do, but I urge you not to assume that we have here a problem that can be solved in terms of present procedures.

The second problem is one that requires for its solution the cooperation of international librarianship. It is probably as much a legal as a library problem. I refer to the setting up of international bibliographical information—the identification of pertinent materials for study of a subject in all countries throughout the world. One such project is the international Dickens bibliography being prepared by Ada B. Nisbet of UCLA—a project unique in its scope and aim.

The third problem is less that of libraries than it is of humanistic scholars. There is a need to pursue scholarship as teams—groups of scholars working together on a subject and sharing their knowledge, not unlike scientific teams.

I think, finally, that the successful collaboration between research librarians and humanistic scholars must be continued and expanded. Not merely because this partnership is characteristic of a humanistic endeavor but because decisions about selections, collections, and reorganization of materials should be done jointly. This, too, would be the best way to monitor the changes in the field and to make plans to take these things into account. And perhaps I would add not merely between scholars and librarians, but among librarians within a country and between countries.

THE CHALLENGE FROM THE PHYSICAL SCIENCES

William K. Hartmann
Planetary Science Institute

MR. OSBURN: Thank you very much, Professor Cohen, for getting us off to a good start. You told us many of the kinds of things we need to hear, but now I have a deep pain in the middle of my chest.

It is my pleasure to introduce William K. Hartmann, Senior Scientist at the Planetary Science Institute in Tucson, where he has been since 1972.

Dr. Hartmann received a Bachelor of Science Degree in physics from Pennsylvania State University, a Masters of Science in geology from the University of Arizona, and a Ph.D. in astronomy, also from the University of Arizona. Prior to his work in the Planetary Science Institute, Dr. Hartmann was co-investigator on the 1979 Mariner-Mars Mission and was on the faculty of the Lunar and Planetary Laboratory of the University of Arizona. His research focuses on the origin and evolution of the solar system and the planetary bodies, moon, Mars, and satellites. He is interested in the sociological impact of space exploration and pollution.

Dr. Hartmann has served as a consultant to the Smithsonian Institute and is co-winner of the 1965-66 Ninninger Meteorite Award. He is co-author of a NASA publication entitled: New Mars, 1974. He has many highly-technical publications and also many less technical publications for the informed layman, such as, Astronomy, the Cosmic Journey, now in its second edition; The Grand Tour, Guide to the Solar System, 1981; Small Bodies of the Solar System, a collection published in 1981; and many less technical articles.

I am very pleased to present Mr. Hartmann, who is a long-time personal friend of mine.

MR. HARTMANN: Before giving this talk, I spoke with a number of researchers in my general field of astronomy and planetary science and put together a list. I told them, "I have a captive audience of librarians here. What would you like to say? What are your pet peeves?" My talk will be a blend of my own personal experience and some of the things I picked up from talking to other researchers.

Let me first describe the astronomy situation in Tucson, because this will explain the kind of library environment I come from. There are a number of separate astronomical institutions there: the Astronomy, Geology, and Planetary Science Departments at the University of Arizona, each having its own departmental library, and the University of Arizona library system with a separate, large, very fine science library, plus the National Headquarters of Kitt Peak National Observatory, which has quite an extensive astronomy library. There is a hierarchy of library facilities available to a scientific researcher, from his or her own journals and collection of reprints, to the department room down the hall, to the library across the street in the main science library at the university. I find that all of these are used, but certainly the tendency is to start with what one has at hand and work outward.

That tendency can be seen, perhaps, in the following story. As a graduate student in the 1960s, I began to see at that time the emergence of what was called "big science". Big science was what came along when there was a tremendous investment in science. It was a golden age of science, in the '60s and even early '70s, and something happened that, I believe, affected the way libraries were used. My perception of this may have been aggrevated by the fact that the head of my department was very much in the European mold as a scientist; that is, he was definitely the head—he went off to meetings and came back and reported to us. I began to realize that he was going off to these meetings and talking to his colleagues, who were also out in the very front lines. There were only a handful of researchers in planetary studies at that time, but this pattern still persists to some extent in physical sciences. He would go off to the meetings, exchange information verbally with people at these meetings, handing photocopied lists of data back and forth, and then come back and talk to us verbally about what the results were.

In that environment the scientific paper became almost the afterthought. The scientific paper was clearly the professional responsibility—nobody was downgrading the paper—but the paper was something you had an obligation to produce. The research was the active process and the paper only a later record for other people not on the front lines of research. This was very different from my original idealistic view as a student: that the paper was the culmination of the work. I had thought that you did the research and almost as quickly wrote the paper, and then when the paper went out, everybody else read it in the journal. But it does not seem to work out that way.

Now, it seems to me that perhaps the first view applies during "golden eras" of massive science funding and that we will move away from that view in the next few years if the cutbacks in scientific funding continue. That process of exchanging all the real science content at the meetings was really brought about by the tremendous speed of science, due to all the money coming in. People had money, people were doing research, everything was happening so fast, that you had to talk to the other people about what they were doing. This is elitish and it is not entirely good, because it means that the people who do not have the travel budget and cannot get to the meetings and thus must rely on the journals in their libraries are always at a disadvantage and a little bit behind. But it has the virtue that science, knowledge, and resulting new technology for the world economy march ahead very fast.

The pattern of verbal exchange competing with published exchange also applies, I believe, mostly to people who stay in one scientific field or subfield and spend most of their careers in that field. There is a tendency, and it may be more common in astronomy than in other fields, that every three or four years people move into a slightly different subject. Someone who is working on stellar atmospheres may decide to work on some problems of galaxies. He may be using the same instrumentation on the telescope but the subject changes. Those people—I talked to some when I was doing my little interviews—very clearly go to the library in the more traditional way: they read the books, check the background information, the journals, the proceedings of conferences, in order to bring themselves up to speed in this new subject. The people who stay in the same subject area know who is doing the work; they get on the telephone and call that person to find out what he or she is doing now. To these people, journals and the books are more the historic record of what was done than their current input.

To them, the library becomes mainly a citation source instead of an active knowledge source.

I am inclined to think that people in my field spend maybe 20 percent of their effort with their own immediate personal collection, and maybe 40-50 percent with the department collection right down the hall, and maybe 40 percent with the major science collection in town.

In doing any kind of work, particularly background reading, if you have just gone into a new field, or if you have done some of the kinds of things I have done—writing textbooks, which is not common to everybody—you must go dig out the old references. This brings me to the topic of annual abstract volumes. For example, there is an annual Astronomy and Astrophysics Abstracts. These are key volumes, and I found out, to my surprise, as I talked to some people, that not all of the researchers in my field are aware of them. I ran into one astronomer who was using Science Citation Index to find out what was published in his particular field. I said, "Don't you want to use the annual Astronomy and Astrophysics Abstracts?" And he said, "What is that?" In other words, science researchers are still not fully familiar with the library resources that provide the best tool for a specific job.

Perhaps this is a signal that there is more need for interplay between the librarians and the researchers. I do not know how to accomplish this, other than to grab the researchers as they come in the door, and say, "Let me spend five minutes telling you what we've got." I am sure you have all written many of the memos about, "Here are all the things we have at the library," that I have thrown in the waste basket. The physical scientists are the worst of all, of course, for being the ones who think they know it all already, so they are not going to read your memos.

Let me run down a shopping list of a few other incidental comments that came out of my interviews. Some people felt that computers allowed much better opportunity to do detailed subject referencing of what is in current journals, what is in conference proceedings, or just general books. One person commented that a book in geology, for example, would be indexed under geological headings. But one-third of that book might be devoted to lunar samples, lunar geology. This book would not really find its way into headings on lunar astronomy or planetary work, and it would be missed by the researcher working in this new field. So, he said that with computer indexing we ought to have room to store all the information about all of the topics that are really in this book. Several of these people were visualizing that it would be nice if there were such a computer index in each department terminal. You would punch into your department terminal to access the main catalog at the library to find out what is over there and save yourself a trip.

On the other hand, there is a scepticism about whether this high technology is really the way we want to go. I see a real paradox among the people I talk to about this. There is a concern that the technology is developing so fast, we could get so dependent on specific information-recalling machines, with all of our information stored in a machine which ten years from now will be obsolete, we could get into a situation in which we cannot readout. The machine begins to wear out, and no parts are available. Then we find we have a new level of technology, so everything must be recataloged. Amazingly enough, an example of this scepticism comes up regarding conversion from the Dewey Decimal system to the Library of Congress

classification, because there are still subcollections that have not been converted to Library of Congress. Recent books are filed in a Library of Congress section in one part of the library, but older books still languish in an old Dewey section because manpower has been inadequate to complete the conversion. One of my interviewees, who was the most radical extremist, said: "How can we trust these librarians who cannot even get converted over to the Library of Congress system to start putting everything into the new technology machines?" That is the serious point: we are going to get too dependent on new technologies and get everything half converted, when we have to convert yet again. How do we deal with that problem?

Something that came up over and over again—which I am told that everybody in the library is aware of—is the problem of journals off to the bindery. It is critical, I think, particularly in the physical sciences. A researcher wants that six-month old journal and it is out to the bindery. Can we get a faster turn around time?

Another comment that came up was about the placement of the date of publication on the spine of the book. It is very useful to the physical scientist; he knows which book is out of date. If he is looking for something that summarizes the state-of-the-art in 1968, he could find that book quite easily without having to go through all the books.

My final point concerns library archival storage of raw, scientific data. Back in 1972, when I was on the Mariner 9 Mission, our mission had a vehicle in orbit around Mars that was taking television pictures and making maps of the surface of Mars. It seems to me that the amount of space that it took to store all the eight by ten printouts was something comparable to all the wall space in this room. We had a library facility where it was all stored and we could come look at it. I received, only a few months ago, a letter pointing out that NASA was going to distribute a laser disk to a number of the investigators, and on this disk was not only all of that photography from Mariner 9 but all of the missions, except the last Saturn encounter; all of the imagery from all of the planetary space vehicles in the whole space program on one disk.

The point of that is not so much the condensation of volume, but the idea that we are generating new raw scientific data that will be of interest for many years to future researchers. These are not only pictures, but the equivalent numerical data, magnetic field measurements and temperatures, and so on. Similar data come from other physical sciences, and during periods of low research funding—as at present—there are often inadequate funds to analyze masses of new data within a year or two of their acquisition. Thus we have a growing need for archival libraries of raw data. One might project that there will be a move towards storing raw data in libraries for physical science scholars to look at four, five, ten, twenty years from now.

I think that has actually started. NASA has established seven planetary imagery centers. They are at University of Arizona, Brown University, Cornell University, Washington University in St. Louis, the Jet Propulsion Lab in Pasadena, the U. S. Geology Survey in Flagstaff, and the Lunar and Planetary Institute in Houston. These are essentially libraries, but NASA has done an end run around the conventional research libraries by establishing these as independent organizations at

universities, or the other centers, with funding directly from NASA. That fact might be of some interest or even concern because this is the first step in the direction to establish archival centers outside the normal library systems. These imagery centers have all these images stored in various forms—eight by ten prints, disks, etc.—and are available to researchers. I see a relation to what Ralph Cohen mentioned with the concept of libraries storing films and other types of media in the humanities—the same thing is happening in science.

To conclude, let me summarize a few major points. In different eras with different levels of financial support for science, libraries may have different balances between the function of providing current research materials (e.g., the latest journal) to active researchers and the function of storing historic reference materials for citation purposes. In the modern era, social patterns such as funding cycles change on time scales faster than libraries can evolve, so we must design our libraries now to carry both these functions successfully into the future. To carry out the active research functions, we may see increased pressure for detailed, computerized indexes, but we need systems that can be guaranteed not to become obsolete or even inaccessible due to engineering advances. We must avoid the temptation to be dazzled by some fancy new state of the art system of data storage that may create more long term problems than it solves. We need to speed up turnaround time for binding of the latest journals.

To carry out the storage and citation functions, we need not only better indexing systems, but also a better awareness on the part of researchers of what indexing and abstracting services are available. Dates on spines of books are helpful.

Finally, I speculate that a whole new function may evolve rapidly: the function of storing various kinds of raw data produced by major scientific projects, where, due to lack of funding or sheer mass of data, analysis may spread out over many years and many institutions for some years after the data acquisition project is completed.

THE CHALLENGE FROM THE SOCIAL SCIENCES

Kenneth Prewitt
Social Science Research Council

MR. OSBURN: Thank you, Bill, for a very illuminating probe into some of the areas that we will talk about later in the panel discussion.

Our next speaker just returned from Africa two days ago and is representing the social sciences. Kenneth Prewitt is President of the Social Science Research Council and Professor of Political Science at the University of Chicago, on leave. He received his B.A. at Southern Methodist University, his M.A. from Washington University, and his Ph.D. in political science at Stanford. Prior to his work at the Social Science Research Center and at the University of Chicago, where he has been since 1965, Dr. Prewitt was director of the National Opinion Research Center, where he is still a Senior Study Director. He has been visiting Professor in other universities, including several visiting professorships in Africa.

Dr. Prewitt has board responsibilities on the Scholarly Communications of the People's Republic of China; the National Opinion Research Center; the Conference Board of the Associated Research Councils; and of course, the Social Science Research Council. He is the author or co-author of many publications, the titles of a few are Principles of American Government, now in its third edition; Introduction to American Government, now in its third edition; Elites and American Democracy; Introductory Research Methodology, East African Applications; and Institutional Racism in American Society. He is on the editorial boards of a half dozen leading social science and scholarly journals.

I am very pleased to present Kenneth Prewitt.

MR. PREWITT: It is a pleasure and compliment to participate in your 50th birthday party. Although I fear, as the speakers before me, that I have some bad news. It is good news for the social sciences, but news which places greater burdens on research librarians. There is much exciting work going on; it will have far-reaching implications and consequences for the way in which research scholars want to use the critical service you provide.

I have just three observations to make, the first about interdisciplinary work in the social sciences, the second about the international perspective of social sciences, and the third about the historical dimension.

Social scientists are increasingly impatient with disciplinary boundaries, a theme already alluded to by Professor Cohen. Indeed, if you look over the social sciences with an historical eye, you will see many major advances occur by bringing together intellectual questions from more than one discipline. Social science has invented a broad array of subdisciplines and new specialties.

I start with an example, which will not immediately come to mind. Voting behavior is now considered mainstream political science, but it started as a specialty of social psychology, psychometrics, and market research. Social

linguistics was an intellectual invention which brought together sociology, psychology, and linguistics. Public choice theory comes from welfare economics, mathematics, political science, and philosophy. Organizational theory emerged from the intersection of public administration, sociology of groups, and industrial psychology. Epidemiology, statistics, and demography have all infiltrated the social sciences. We continue to have the broad labels of political science, anthropology, economics, sociology, and so forth. But research life is not organized by those labels. Research life itself is organized by a much more specialized and constantly changing set of labels.

In terms of numbers of practitioners and institutional structures, the two most important interdisciplinary events in the last three decades are area studies and policy studies. Area studies were created from a half-dozen disciplines: history, languages, literature, sociology, political science, economics. This interdisciplinary effort is one of the great achievements of American higher education in the last 20 or 30 years. The same with policy studies. There were no policy studies to speak of in the 1950s and 1960s. This interdisciplinary field emerged in response to the federal funding situation. Now it has become its own discipline, just as area studies has become its own discipline in important respects.

The social sciences are constantly discovering new research questions at the edges of their discipline. Let me emphasize that this discovery takes place not only within the social sciences, but also as the social sciences abut the natural sciences and the humanities.

A major new field is behavioral health, which is at the intersection of social science and medicine. In the neurosciences, psychologists and neurologists are working together. Interdisciplinary work with the humanities, as so eloquently described by Professor Cohen, occur as social history and literary criticism interpenetrate with cultural anthropology and subdisciplines in sociology and psychology.

This constant interdisciplinarity is the moving frontier of social science. It has been so for at least 60 years. There are two implications for research libraries. First, you should resist efforts to establish departmental libraries. Departmental libraries help graduate students studying for prelims, but they are not that much help to the most innovative research scholars, because these scholars are going to be dipping into somebody else's departmental library, not their own. They are constantly reaching beyond their immediate discipline, and in that process inventing new specialties and disciplines. There is a frontier always just outside one's immediate research. The initial implication of interdisciplinarity is that it is not specialized departmental libraries—political science, anthropology, sociology—which are a service to many research scholars. It is something else, which takes me to a second implication for research libraries.

We have a major challenge with respect to classification. If, for example, philosophers are now working on biomedical ethics, how do they access the medical literature? How do they locate that part of the medical literature which makes sense to them? A very long list of those kinds of instances could be presented to you. As you know better than I, the challenge for the classification system is to help a scholar intellectually browse or approach an intellectual terrain other than his or her immediate specialty.

I turn now to my second general observation about social science in the next decades. For many years, American social sciences were not overly concerned about how they imported new scholarly ideas from abroad. Important scholarship from abroad came into the United States intellectual system without any prodding. Research methods and social science theories came in the suitcases and in the heads of, especially, European immigrants during the pre-war and immediate post-war period. Leading European intellectuals were teaching in our universities, in the New School, Columbia, Chicago and then across our major research universities. If we did not worry too much about gaining access to the work of the foreign scholars it was because foreign scholars were on our campuses.

With the exception of Europe, the social sciences were very undeveloped. We did not have that much to learn from Asian and African and Latin American colleagues. It was not necessary to bring into our sciences dominant theoretical constructs or new methods of analysis from colleagues abroad.

Neither of these two conditions now hold. We can no longer depend on political migration to bring in new and important ideas from abroad. And yet there is ample to be learned from our colleagues abroad. Some of the best work in political science is Latin American; some of the best work in developing economics is Asian; some of the best work in social history is Western European; some of the best work in developmental psychology is Japanese.

I am not talking just about how area scholars access materials that are scattered around the world. I am talking about the disciplines and the specialties within disciplines themselves. We need "import structures" in the social sciences; we need some ways in which to find and draw into our own teaching and research the best work that is going on abroad.

This need imposes demands on research libraries. Perhaps your acquisition policies have not yet recognized that American social scientists are producing a declining share of the world's most important research monographs and materials. Much of this work, of course, is not in English. I am not talking about work which the area scholar wants to read in order to understand his or her own research site. I have in mind the psychologist, political scientist, or sociologist who wants to read the best work in sociology, political science, or psychology that is coming out of a different research tradition and a different culture.

The second point I want to stress, then, is the deepening internationalization of research in the social sciences. This healthy development will create a global community of scholars. In the process it will challenge university research libraries in the area of acquisitions and translation policies.

I turn quickly to my final general observation about the social sciences in the next decade and beyond. Most social scientists use the library less to read analysis by colleagues, whose books we have in our personal libraries, than to locate primary data—statistical data, newspaper collections, popular literature, and so forth. The library is a field site or laboratory.

This comment we should have in mind, as I turn to the third general observation. There is in the social sciences a growing and deepening interest in

trends—in temporal sequences, social and economic indicators, over-time measures, tracking events, behavior through time, and so forth. Across the social sciences there is resistance to the idea that one can take a snapshot of anything and understand very much about it. The things studied by social science are part of an over-time process, and the evidence, materials, and data needed, therefore, must allow for sequential or longitudinal analysis. Research libraries will be expected to store materials so that it is easy for the scholar to track across time. Whether it is statistical data or fiscal reports or foreign newspapers or ethnographic descriptions, the scholar will not be interested in just a particular slice in time. Sophisticated methodologies are being developed to aid the scholar and they will have to be married with the way in which libraries store and retrieve materials.

A further implication of this observation is that it will force a closer relationship between research libraries and computer centers. This is to see the computer center as more than a service agent to aid your classification and storage schemes. As you know, already university computer centers store statistical data of importance to social scientists. The federal government, for instance, turns to the computer center as the preferred method for getting census and related data to the research community. But we need a strategy which recognizes that it is the interrelationship of the computer center and the library which will become the research home for many scholars.

I will quickly summarize the three broad developments presently under way and which will gain momentum in the next several years. The continuing ferment at the disciplinary boundaries, both within what we commonly call the social sciences and where the social sciences intersect the humanities and the natural sciences; the deepening internationalization of the social sciences which includes but goes beyond area studies; and the increasing interest in the historical dimension across all of the social sciences. These developments place serious challenges before the research librarian—in acquisition policies, in deciding with whom you will consult, in improving classification schemes, and so forth. I do not doubt that you will meet these challenges.

PANEL: LIBRARIES MEET THE CHALLENGE

MR. OSBURN: This part of the program will begin with a panel discussion, leading into a discussion with the audience. I need not give lengthy introductions to the three panelists, who are ARL Directors; you know these people, I am sure. To my immediate left is Warren Kuhn, Director of Libraries at Iowa State; then Patricia Battin, Vice President and University Librarian at Columbia University; and David Bishop, Director of Libraries at the University of Georgia.

The Panel discussion and the discussion with the audience will be moderated by Elmer R. Gooding, Acting Vice President for Academic Affairs and Professor of Economics at Arizona State University. Professor Gooding has a B.S. in business administration and economics from McPherson College, and M.A. and Ph.D. degrees in economics from the University of Kansas. Prior to his present position he was Assistant Dean and Director of Graduate Programs in the College of Business Administration at Arizona State, and Assistant Provost at Arizona State. Dr. Gooding has been an NSF Fellow. He has been a member of the Arizona Board of Regents Academic Affairs Council for the past two years, and has been involved in a broad spectrum of academic/administrative responsibility. Dr. Gooding is the author of many papers in the fields of economics and academic administration.

I will turn the program over to Dr. Gooding at this time.

MR. GOODING: Thank you, very much. It is a pleasure to be with you today. I congratulate you at your 50th birthday and your 100th meeting.

It is my feeling that libraries are very central to the purpose and function of a university. When Don Riggs asked if I would come and join you, I very readily agreed because I am very interested in knowing more about what you are thinking. This was a particularly interesting program for me because I have an opportunity to hear how some of my colleagues in the academic areas relate to and question how our libraries operate, and now I will have an opportunity to hear you question some things as well. So, this is, indeed, a great opportunity for me.

You have had three interesting and thought-provoking speeches, and you are going to have an opportunity in a few minutes to ask some questions of the speakers. What we are going to do first, though, is to give each of the three panelists an opportunity to comment on the speeches and/or the general subject matter that we have heard discussed thus far.

I would like to make a couple of comments first, however; I can never resist talking a little bit about economics. You deal in scarcity and that is, of course, what economics is all about. You have people with unlimited wants and you have limited resources, and if you have ever picked up a "principles of economics" book, that is essentially what the definition of economics is. So, you live economics each day, and, I believe, we have a good deal in common.

At this point let us turn to Pat Battin.

Remarks by Patricia Battin

MS. BATTIN: Charles said earlier that he had a deep pain in his chest; I have a splitting headache after listening to the requirements from our three speakers this morning. I heard a new twist on the interdisciplinary nature of research that I had not thought about before, and that was that each one of the methodological approaches from the different disciplines to a particular collection wants it separate and organized in a way that is useful for that particular discipline. I am not sure how to work that out.

But seriously, I want to thank the speakers for their very thoughtful and instructive remarks on the changing and expanding scholarly requirements in their respective disciplines, and the implications for library support services. I welcome this opportunity to respond to their perceptions and to discuss ways in which scholars and librarians together can identify and plan the new services demanded by a technological society. My only regret is that we have not heard at greater length from the third element in this necessary coalition, and that is the university officers who will be responsible, in this economically bleak decade for higher education, for providing us with the financial support to exploit the extraordinary capacities of information technology in the service of research and scholarship.

I think we have to accept the undeniable fact that technology has made both our old and our new worlds unaffordable, at least in the style to which we have been accustomed, and that if we are to respond successfully to the new demands, fundamental choices must be made. I would like to summarize briefly the common theme that I heard today in these presentations, all of which underscore for us the need to provide efficient access to a vastly expanded universe of knowledge, in a variety of formats.

- The international scope and nature of scholarship.
- The continuing growth of interdisciplinary investigation.
- The extended definition of scholarly material.
- The variety of new formats not associated with the traditional concept of libraries, which I have referred to as books and mortar.
- The confusion and the profusion of information technology for scholars.
- The need for programs of continuing education for scholars in rapidly proliferating bibliographic tools.

These changes in scholarly requirements combined with our economic constraints imply fundamental changes in the way libraries will provide services.

I think the presentations also reflected a basic obstacle to productive cooperation between scholars and librarians, an issue which I think we must openly address, and that is scholarly resistance and librarian credibility. It is the rare scholar who says, "Don't build departmental libraries."

In order to meet the requirements that our guests have outlined, we are faced with a considerable series of choices in restructuring our library services, choices which will inevitably involve possible inconveniences, and certainly transformations of research methodology and scholarly habits. As a profession we have substantial expertise and significant qualifications that are largely unrecognized by our faculty colleagues, and conversely we have often assumed an unwarranted authority concerning user needs.

We need to create new capacities, both on our local campuses and through our professional societies, for productive debate and agreement on the necessary choices. To name a few, we need scholarly involvement in planning resource-sharing structures, in shaping local collections in the resulting national context, in a series of preservation decisions involving both choice of format and selection of materials to be preserved, in the determination of affordable levels and complexity of bibliographic standards and controls, and in the development of user-friendly online catalogs.

The achievement of the kinds of services outlined by the speakers will require a level of institutional commitment to cooperative activities which, I believe, must go beyond the kind of voluntary associations which have characterized university and library activities to date.

And finally, many of us believe that a fundamental restructuring of the university organization is necessary in order to prevent costly and ineffective duplication and overlapping of scholarly information services, regardless of format. We need to view the provision of information as a function in the university, rather than as a physical service center such as a library or a computer center. Scholarly materials on magnetic tape or optical disk or in books and journals are still scholarly materials, and access to them must be provided in an organized, consistent, and efficient manner. The telephone system, traditionally seen as an administrative support system, is now vital to the flow of scholarly information through telecommunications channels.

I hope that our faculty and administrative colleagues will join with us in rethinking the organization of our universities in order to provide the organizational framework necessary to meet their information needs.

Remarks by David Bishop

MR. GOODING: Next we will hear comments from David Bishop.

MR. BISHOP: I have spent some time over the past few months talking with a number of researchers, in a variety of fields, about how they work and how they use research libraries. Many of the things I heard were not surprising and many were consistent with the ideas we have heard this morning.

Most of the scholars observed few changes in the way they had used research libraries over the past five years, and did not expect a large number of changes to

occur during the next five to ten years. In talking with them about possible future changes, I found them to be more amenable to resource sharing and the associated delays in obtaining materials than I would have thought. I also found them to be less enthusiastic about remote bibliographic access than I expected. As I talked about computer terminals and microfiche catalogs, I expanded the location of these from the office to the home. I then found them getting somewhat more enthusiastic. As one of them said, "I meet people in my office, but I work at home."

When the options were further expanded to include remote bibliographic access with delivery systems, they became extremely enthusiastic. Most felt coming to the library to be a waste of time. One person confided that his use of the library depended in part on whether the grant he was working on at the time carried a research assistant who could do his library work for him.

I talked with people at some length about technology; microcomputers, academic computing, non-bibliographic data bases, and the like. This general area is one that I believe is extremely important. I asked each of these people if they had a microcomputer, or had plans to obtain one. Finally one person said, "Yes, I ordered one two weeks ago." I said, "Wonderful. What are you going to do with it?" And he stopped for a minute and said, "Well, first I'm going to catalog my reprints." I said "You are?" and he said, "Yes, I've got hundreds of reprints, and I can't get them organized, or find out what I have, and that's what I'm going to do." Obviously, he was going to get the microcomputer first, and figure out what he was going to do with it later.

There is an enormous increase in the number of microcomputers on university campuses. I found that in the last six months at the University of Georgia, over $.25 million has been authorized for the purchase of microcomputers, and that is just those purchased with State funds. It does not include those that are paid for by grants. Clearly, we are going to see a large number of researchers comfortable with microcomputers, and knowledgeable about them, who increasingly regard computing as an integral part of their research.

I talked at some length with researchers about non-bibliographic data bases and found little awareness on their part of actual systems in their field, or of colleagues who had used them. But as Mr. Hartmann alluded, this is an area that is developing quickly with many of the systems being quite interesting. Some of these systems are not within the generally perceived scope of libraries. There was one that I ran across called the Advance Systems for Process Engineering, which is an advanced process simulator and economic evaluation system that calculates heat and material balances and provides estimates of capital and operating costs. Others, though, are clearly library materials. One, a Spencer Encyclopedia, provides a one million-word data base of information on the poems of Edward Spencer, or another, a data base of Chinese herbal medicines containing 8,000 traditional Chinese medicines for comparison with western medicines. Some systems fall rather in the middle. For example, there is a data analysis system to provide infrared astronomical satellite data producing a catalog of perhaps a million infrared sources in the sky, as well as other information for astronomical research.

There was one system that I particularly enjoyed, although I am not sure how it would be categorized. It is called The Learning of Grammar, and it is described as

the interaction between a parent machine and a child machine which simulates the discovery of basic rules of grammar. I am not sure I am ready for parent machines and child machines.

These are examples of the kinds of systems that are being developed. It is likely that we will have an increasingly large number of researchers accustomed to building and using systems on computers, now mainly microcomputers, a proliferation of sophisticated systems of non-bibliographic data bases to support research, and these will combine to make academic computing a major factor in the future.

The key question is, What is the role of research libraries in this area? I believe we must be involved in academic computing if we are to maintain the same type of relationship to research and researchers that we have had in the past. There are problems. Some of the systems being developed are really library materials in new format, in some cases with built-in access systems. Others, like the Advance System for Process Engineering, are quite different from anything we have had to deal with. And, it is going to be difficult to pick and choose among various types. We will have a hard time saying to a scholar, "We will support this system because we perceive it to be library-related, but we will not deal with that one." We may find ourselves in a position of having to be more involved in non-bibliographic data base systems than we want to be, or not be involved at all. Another problem is that many computer centers view academic computing as their responsibility through their user services, and would interpret significant library involvement as an intrusion, and this may be our biggest problem. The ideal solution which Mr. Prewitt described and discussed, it seems to me, would be a shared solution with libraries and computer centers each contributing to the development and capability. Clearly, this will take a great deal of negotiations, and our skill in negotiating may well determine the role of libraries in supporting such activities in the future.

MR. GOODING: Thank you, David. Our next speaker is Warren Kuhn.

Remarks by Warren Kuhn

MR. KUHN: I believe I am going to be a little more eclectic than the previous reactors. I am also reminded of a story appropriate to this morning's mission.

It is one told about engineers. During the French Revolution, three individuals were taken before the Revolutionary Tribunal and sentenced to be guillotined. Two were men of the cloth, and one was an engineer. On the morning of the execution they were all led to the block. The first man of the cloth knelt down, said an appropriate prayer, and put his head forward. The guillotine blade came down and stopped just short of his neck. The crowd went into absolute pandamonium, and pardoned the individual. The second man of the cloth was brought to the scaffold, and he put his head on the block. Again, the guillotine came down and stopped just short of his neck! There was a tremendous roar from the crowd, but they also pardoned the second man. Then, the engineer walked up to the scaffold, wondering what in the world he was going to do next. He knelt down, looked up, and said, "Hey, I see your problem."

Even though we sometimes feel like that engineer, I want to reassure our three scholars here this morning that we are doing some of the things that they would like us to do. We have all been asked, "Why aren't you doing something? Can't you really get to the root of the problem?" I would like to think that if we are not at the root of the problem, then we are doing our best to fertilize it with some answers.

Dr. Prewitt mentioned the need for access to raw data. Are we providing such data series? I think we are doing something about this, not only at Iowa State, but at many ARL libraries. I use my own institution only as an example. A group composed of a sociologist, an economist, computer personnel, and the head of our library's government publications department are working jointly through our State Data Center on campus with computerized census data provided by the U. S. Bureau of the Census. The intention is not only to aid scholarly study, but also to promote dissemination and provide access to this material for the smaller communities in Iowa. This group by means of workshops is involved with small-town users, members of municipal governments, showing them how they can best use these statistical tapes. Outreach, in other words, and it is a program undoubtedly duplicated at other ARL libraries.

Dr. Cohen spoke of pop culture. All of you know there are excellent collections of pop culture, western pulps, science fiction, comic book collections, in a variety of ARL and other institutions. You may not know, Dr. Cohen, that there is an excellent collection of underground comix (that is spelled with an "x" and not a "c") at Iowa State. While this collection is listed as noteworthy by the Comic Art Collection, a serial devoted to such exotics, I must admit a sense of trepidation when we first acquired it. These comix are not only masterpieces of the counter-culture, they are pretty lusty examples of pornography as well. Nevertheless, I believe they are unusual scholarly material. At the risk of being facetious, one could say they are truly food for thought. They are, of course, in rather poor condition. They have been contributed by their authors and artists, many of whom were also their own publishers. Collectively, they certainly represent the wave of ideological thought in the 1960s in comic art. Certainly, we intend to continue them. They were also gifts; we did not have to buy them.

Another comment that Dr. Cohen made was on films. There are any number of superb film collections already begun, particularly theatrical film, at UCLA, USC, and other institutions. There are also two unique areas of film collecting, which I think will be of superb use to scholars. One at the University of South Carolina is a collection of millions of feet of Movietone News. The other is at Iowa State, where we have begun to develop what is the American Archives of the Factual Film. We have close to 8,000 of these non-theatrical, educational, business, and industrial films, some going back to the turn of the century. The earliest one, entitled "Back to the Old Farm", depicts the "advances" that were taking place on the farm in 1911: the powered tractors instead of the horse, the introduction of electrical equipment, and the rest of the advances of that day. At least a half-dozen scholars have come from around the country to use these collections, and we answer innumerable requests for film data. The point I want to make is that we are taking the steps Dr. Cohen suggests, preserving these films in libraries, already enriching our scholarly cinematic sources.

Dr. Hartmann, had a very interestisng comment that all of us nodded at, delays

in binding process. I am sure each of us have had the same comment from faculty: "Why can't you get binding speeded up much more rapidly than it is being handled now?" Well, we are taking steps there as well. At Louisiana State University there is a new online computer system for binding records that is now in place which should speed up the binding operation not only for shipments but for daily queries on the status of materials. All of this should get the materials back to the faculty member that much more quickly. The University of Iowa, Iowa State, the University of Northern Iowa, and, I understand, the University of Illinois will be involved in using this same system. So, we are doing something about trying to get the materials returned to you more rapidly.

Finally, on the lack of knowledge of faculty members about the availability of bibliographic tools. While they may be aware of their own fields, they are often ignorant of other areas. Most of the institutions in this room are working to correct this by providing various types of library instruction. Iowa State, for instance, has an informal series of short seminars given once each week for a five-week period, with three of our librarians each covering research tools in a particular area: engineering and technology, the biological and agricultural sciences, and the humanities. Over 150 faculty members and graduate students annually come in for these particular seminars to find out what the library has for them and how to make better use of our resources and facilities.

As Dave Bishop did, I interviewed campus faculty about today's topic. These faculty represented the following fields: engineering, physical sciences, parasitology, genetics, entomology, veterinary medicine, botany, and sociology. One of them was president of two national societies, and another the Associate Dean of the Graduate College. A third had just patented a revolutionary new method of extracting alcohol from fermented corn and grain. These people are sophisticated. They use libraries, and they know what scholarship is about. I asked about the computer and they said, "Some researchers need a computer, but not everyone." They said, "In most scientific fields researchers know one another; they are already alerted to papers forthcoming or work in progress." They noted that at best for them there was little current need to store in or access data bases except when they are looking into new fields or when they are working with graduate students seeking a new thesis topic.

On a different matter: the amount of published material faculty are finding seems to vary radically in terms of publication amounts. We all admit that journal publication is increasing. There are more new journals appearing all the time. Is it ever going to really stabilize? Well, in fields such as computer science, business, human relations, and management, articles submitted by some of these faculty members, at least at Iowa State, are being returned due to lack of publication space. In some areas, there is a literal overload of materials being submitted.

In some scientific fields, declining research funding, of course, has led to severe declines in publishable material. One distinguished faculty member told me that in the last month he knows personally of three journal editors that reported a shortage of submitted papers. They were now literally beating the bushes for material and publishing small announcements in their journals saying we want more papers. The faculty members saw adverse factors in this because the accelerated search for more materials could produce less valuable material which tends to dilute research.

This very distinguished faculty member's final comment was interesting: "In the sciences at least, we have built a big furnace, but we're now running out of coal."

One of the impacts faculty reported regarding reduced funding was that it was also reducing the number of graduate students, who do much of the work. They freely admitted that research faculty often were not doing their own searching. One faculty member felt that this decline in support for gathering information, if publicized, might help support library requests for better funding for more computer searching.

In the case of the parasitologist, the botanist, and the water engineer, their research fields are widely scattered. Their greatest needs were for back sets and retrospective research materials, particularly foreign literature. One of the things, though, that seem to concern each of these individuals was that the journals they used retrospectively in foreign literatures were not indexed. They wondered who would translate these for computerized access (an issue that arose this morning), who would do the key-word analysis, and who would pay for the input. That, of course, is a question for us all.

A common complaint in the biological sciences was that the same material was dished out regularly in various articles. The social scientist also noted that repetitive research fills journals continually in her field. And they all said they spend time to go through these many articles, but the results are usually disappointing. One or two noted that much repetition could be due to not searching back issues of journals.

Another common theme of the science faculty was their dependence on earlier articles. They continually stated these had more meat, that earlier authors had one major idea for one paper, that longer years of work were involved, and that "one individual, one paper, one year" was fairly common in the 1930s and 1940s. They added that there are more review papers now due to the fragmentation of knowledge, and they also commented on the sad decline in writing standards, a criticism, they reported, in which journal editors join.

One faculty member said that thesis writing seems related to TV watching, and this they feel is reflected in the quality of scholarship today. When young, one or two of them pointed out, they would have been considered very odd not only by parents but by neighbors for going to the movies for four to six hours a day, yet our young people spend four to six hours a day watching television. They felt this passive viewing instead of reading was diminishing writing skill.

One engineer was also not convinced that his colleagues used the multitudinous printouts they were getting from the computer. No matter how intelligent they were, it is a myth, he believes, that a working scientist, to keep up, needed to read all this material. He has always equally questioned authors with 50 to 100 citations in their papers, and he wondered if they should just list Chemical Abstracts as their single source. He is not convinced that all those differing opinions are that relevant to research. He only uses two to five in his own work.

Another common theme, and this is a little different than what David had to say, is that faculty desired the physical environment of the library. It placed them

in the proper frame of mind to work. They needed the environmental discipline factor, and they worked harder in libraries than they ever would at home. One scholar feels intensely he could never reach the end of the library's resources and that a computer screen after a limited search gave a false sense of security, one which was not truly serendipitous.

Representing a scientific institution as I do, my teeth grate when people comment, "In the humanities and the social sciences, they use the library as the laboratory, but in the sciences, the biological sciences and physical sciences, they use the laboratory instead." With almost seven out of ten individuals that I have talked to over the years I find that faculty members in the sciences use the library just as heavily as those in the other disciplines and, in fact, use them more heavily because they require the older material to a greater extent than is generally realized.

One last comment. Both physical scientists and engineers agreed on two things with potential for the greatest impact on research, and I really listened to this. One they felt was already taking place; one was going to occur in the near future. The greatest single advance in research in recent years, they believed was the photocopier. It not only saved them time, but let them build their own files. For the second, they agreed that the most important future need for them was an interface of individuals by computers even though both were at remote locations. Since scholars often work on a one-to-one relationship they saw this machine assistance as extremely important in trying out and developing ideas.

DISCUSSION

MR. GOODING: The second part of our format is open discussion, first among the panelists and speakers, and then everyone. So, I will open the floor to the group.

MR. HARTMANN: I have a response to one of the things that Warren Kuhn mentioned. He said that many of the people he talked to commented that in most fields colleagues know one another and know what is going on; this echoes very closely what I said in the early part of my talk. But I wanted to indicate clearly the danger I see in that. I believe that opinion is voiced by those who are very successful and at the height of their careers—we all know what is going on and we know our colleagues. What I see is that we now have an opportunity, in the next few years, to depart from that practice in the following way: by making accessible to researchers at smaller institutions the chance to interact with their colleagues in many institutions. We should also make that opportunity available to the graduate student. The kind of technology we are talking about could, I think, enable this, if we implemented it correctly. Graduate students, the new researchers, the researchers at small institutions could tap into the flow between the top level people. There is an opportunity to make that possible if we index correctly and work with terminals in the right way, etc. This interaction may be more possible for the broad base of researchers who are not at the very top of their fields.

MR. KUHN: I could not agree more. When I made the statement, I left out some comments of the junior faculty members. Their notion, as well as that of senior faculty, is that nobody goes to scientific or scholarly conferences anymore—except librarians, who attend in voluminous numbers—except the very successful faculty who can afford it. The ones who cannot afford it do not go, and I believe telecommunications will influence this greatly.

MR. PREWITT: I would like to pick quickly up on Pat Battin's very telling comment that we have to conceptualize the library not as an institution but as a function and consider what that means for how campuses are organized. I should add just a footnote, from the social sciences, a way in which help may be on the way.

There is some very important work going on in cognitive science, in how the brain functions, and we are a long way from having answers to some of these questions. But, let me tell you some of the kinds of questions that people are beginning to do research on, which could feed back into a more scientific-based information environment on university campuses. For example, instead of complaining that scholars are ignorant of some tools, we should be asking ourselves why does this irrationality, something so obvious, persist? There must be some reasons, some cognitive structures. People are making decisions about what kinds of tools to invest in, and money is scarce; so, also, is time. We must make decisions, but how do people go about making these decisions? A related question is how do people browse? What does browsing really mean? How do we expose ourselves to new intellectual stimuli? We know we are working on a new idea, but we do not even know how to label it yet. That, in itself, is a scientific question: browsing at the deeper level—not how do you walk the stacks, but how does your mind ransack for new ideas.

Work on memory is really having breakthrough consequences now. We know much more than we knew just four or five years ago about how people store and retrieve short-term and long-term memory, what kinds of manuscripts we carry around in our heads, and how we bring these manuscripts to consciousness when we need to use them for our own scholarly purposes.

It seems to me that one of the frontiers, then, is how we can get the best of cognitive science. One might struggle with it as a science beginning to have a conversation with, beginning to interact with, people who have to worry about administrative structures, institutional arrangements, funding decisions, allocation policies, and so forth. In some respects, the library problem could become one of the most important applied problems for what is really a very exciting new basic science, if we could figure out a way to make that happen.

MR. COHEN: I would like to address myself to the remarks of Pat Battin. First, let me say that I think if collections exist in popular culture and film, I am delighted to hear it; that is a step in the right direction. The real issue is a relational one; it has to do with the relation between librarians and scholars. If librarians take the position that their function is collection, rather than seeing that the concepts which govern the use of such collections should be shared with scholars interested in it, then it seems to me that we have not made much advance in restructuring the concept of the library in the university.

Now, the function of popular culture may very well be to examine the relation between popular and elite culture in order to see the interrelations of feelings. If what you are collecting are underground comics which are felt to be pornographic, the rule of pornography in the 16th, 17th, 18th, and 19th centuries and up to the present is important, and scholars interested in that research should be invited in. In other words, my point was that the library should form a team with scholars, point to where the material is, and try to arrive at certain concepts of research. After all, the problem of research is not an abstract one.

I think it is the function of librarians and scholars to begin to reconceive their relationship. This, I think, is what is at issue, rather than the fact that certain conditions exist here or there.

MR. GOODING: Thank you. I think we have given everyone here so much to chew, that it is an opportune time to invite them to become involved in the process. We invite you to step forward at this time and share your comments and questions with us. We will, of course, invite the panel to jump in and say things along the way as well.

MR. PINGS (Wayne State University): Almost 20 years ago, Pat Knapp did her long study in which she pointed out that teaching students, future researchers, how to get into the scholarly communication process has to be the responsibility of the teacher. It cannot be just the librarian. Now, I have heard several of you say that faculty have a certain amount of ignorance. Their ignorance is not the fact that they do not know that certain things exist, it is that somebody just has not told them. Are they really aware that this is all part of communication within their own disciplines or within scholarship? I do not believe that this has become a part of the academic environment and the teachers' responsibility—it is not looked at as that.

Librarians cannot teach this. It is the faculty who mold the students, not the librarian.

I have heard at Iowa State there are some courses to teach people, perhaps, how to get at certain instruments. But this is not the scholarly communication process; it is only a small part of it. I heard Dr. Hartmann say, well, how do we get to these people. I do not think we can find them. It is going to have to be the professions that say, "This is something that we must be constantly aware of." The successful people know how to do this. We hear that junior faculty and graduate students cannot get to conferences; and even if they get there, they do not know how to break in to communicate. Who is going to take on that responsibility? It is becoming far too complex to be able to take an hour's course or even a whole semester course and expect someone suddenly to be able to get into the scholarly communication process that is their life's work.

Those of you who are on the faculty, do you see this as your responsibility, or do you think it ought to be given to somebody else?

MR. GOODING: I am reluctant to answer a question with a question, but I am very curious about something. How many of your libraries offer a course, or something similar to what Iowa State has, for the edification of the faculty in terms of the use of the library and better knowledge about what resources the library has? Let's have a show of hands; how many of you do that? How many do not? More do's than do not's, and a few nonvoters among you.

How many of you offer specific programs for educating the students that are going to be doing research projects? Most of you do. I know I have taken my students to the library when I require research papers, and I usually find I learn as much as they do in the process.

MR. HARTMANN: I have a comment that bears on that, and, I think, what Kenneth Prewitt said has a lot to do with this. The question is not just who offers such an orientation course and who does not, it is how do people's minds really work when they are doing research. My wife says I get a lot of my ideas in the bathtub. Newton said he got all his bright ideas by always thinking about them. In other words, you are out under a tree when you are getting many of these ideas, and must go someplace and tie into some equipment which, no matter how logically and rationally it has been laid out, may not really address the problem because we do not work socially, realistically, in precisely rational modes.

An example of this I wanted to mention concerns yet another collection of pictures or data, the National Space Science Data Center. This is a national institution whose whole function is to make available to scholars the kind of space-related data I talked about. And one of the people I spoke with when preparing my talk offhandedly remarked that the Center is another failure. I realized that I have the same experience. When I write to them to get some pictures for my textbooks, I get back a lot of forms to fill out and pay scales and several pages of things to read, and I just give up. That is the way one works. One should not give up, but one gives up because one knows one can do an end run around it. In this case I can go to the Public Information Office at NASA Headquarters in Washington, when I happen to be traveling there. They hand out pictures to press

people. You go there and say, "I would like the picture." They say, "Sure." And it arrives in the mail a few days later, and that is all there is to it.

So, I am dealing with the bureaucratic way of setting something up. You look at the problem and you say, "Well, I solved the problem, and I'll do this, and we'll go off to the orientation course, or send out a mailing that describes how we work, and so forth." I do not know what the answer is, but I do not think that really addresses getting people in and teaching them what they need to know.

MS. BATTIN: I think there has been, in the last 20 or 30 years, such a change in the rapidity with which information is available, and different kinds of bibliographic tools and indexes, that it is hard for faculty members to keep up with developments. I believe I am correct in saying that in the old days you could do your bibliographic work in your field, get your Ph.D., and probably the bibliographic structure within which you worked did not change too much. Now it is changing so constantly that the younger people coming through are not getting that same kind of grounding. This is what we librarians are seeing.

One of the areas I have been interested in—and have not been able to get anybody to join me in doing something about it—is to try to work with faculty members in determining or identifying the literature structures of particular fields in such a way that we could say that a graduate of Columbia University in economics should have control of this structure in order to make an informed decision. I believe that used to be the case, but now we have this proliferation so that we simply are not doing it because we do not know. The faculty has helped by saying, "Well, you can find it out in the library." And everybody has a different approach to it. I do not know if I explained my point too well, but I believe there is something there.

MR. GOODING: Do we have other questions?

MR. McDONALD (University of Connecticut): I share Pat Battin's concern. It seems to me that when an immature state university library and a very mature private university of large size have a common concern about how we are going to make common cause with scholars to improve libraries, we need to ask our scholar commentators what we do about this intervening group of academic administrators and public officials who are going to have to see this problem as we do and help us avoid becoming adversaries. Unless we can get their help, chances are that the librarians are not going to be able to meet the needs of scholars. I wonder if any of our speakers from the scholarly disciplines might have some advice as to how the scholarly community can be mobilized to help us, because we desperately need that help.

MR. PREWITT: Just one quick observation. Some of these things, I think, will have to be struggled with at the national level first. The Council on Library Resources is going to have to get together with institutions like the American Council of Learned Societies, the Social Science Research Council, the American Association for the Advancement of Science, and so forth, and begin to ask some of these questions, and signal to the university administrators to pay attention to reports. I know that sounds kind of cliche, but they do pay attention sometimes to pronouncements that come from afar. I think it is going to be extremely difficult to

work our way through some of these kinds of questions, certainly the kind that Pat initially made reference to, on a campus-by-campus basis. Without some kind of—I do not want to say model or blueprint—but some kind of blessing by key institutions, including certainly ARL and CLR, we do not signal at that level. That sounds a bit defeatist, but you have all been at this battle longer than I have.

MR. COHEN: I do not pretend to have a solution for this very difficult problem, but it does seem to me that it will require some type of combined effort on the part of librarians, scholars, editors of journals—all those who are involved in the development of scholarly research. And before anything can be done in addressing the national group, it seems to me desirable to get up a plan of some type. Whether this means once again resorting to processes of centralization (that determine certain libraries will be responsible for a certain body of material, etc.) in which it becomes possible to address a national organization and get a response, I am not at all sure. But I am sure that it requires a combination of groups and that it requires some sense of a plan one wishes to support. Otherwise it seems to me that it is difficult.

MR. GOODING: It seems that we are here at a time of commencement. Commencement means beginning, but usually commencements happen at the end of something and at the beginning of something else. We have heard a number of thought-provoking ideas this morning and I am going to give a brief recap. We have heard about overlooking certain types of books, and texts, and types of literature. We might ask ourselves what kinds of literature are we overlooking today that ten, 20 years from now we might look back and say, "Oh, my gosh, we forgot about that." We talked about changes in equipment, from computerization to film media to duplicating procedures to computer searches. We heard about internationalization of computerized library searches. We have heard about the need for import structures. We have heard about bringing together traditional disciplines into a different type of grouping. We have heard about social scientists using the raw data rather than the written word of others. We talked about the time lag in the appearance of articles, the rapidly changing research areas, the oral communication that has taken the place of the written word, at least in the short run. We have heard about department collections versus university collections. We talked about how we let faculty know what the library has, and we talked about the need for a greater degree of interaction among librarians and professional researchers. We looked a little bit to the future in terms of storage of materials, whether it will be on disks or what the approach is going to be.

It seems to me that you have only just begun, and here you are at the end already. You certainly have an opportunity, I am sure, for enough data here to hold two meetings a year from here on. So, when my librarian comes and asks me to go to a second meeting, I will certainly not question it at all!

At this point I would like to turn the program back to Charles Osburn. I want to thank you for inviting me. At some point you might want to consider inviting a group of administrators to your meeting to bend their ears. I have enjoyed hearing what I heard this morning, and I think it is a fine interaction that exists. It is up to you, and thank you very much for inviting me.

MR. OSBURN: I want to thank all of you for being here, particularly our moderator, Dr. Gooding, and the speakers, whose schedules are horrendously tight. We are all grateful that they were able to be here.

MS. ABELL: It is not often we attend programs that we do not want to have end, and I think that was such a program this morning. Charles, I know that this program has been in your head for years, and I am glad that it has come to fruition so successfully. Thank you, along with the rest of the participants.

NEW PRESERVATION TECHNOLOGIES: REPORT FROM THE LIBRARY OF CONGRESS

Introduction: William J. Welsh

MS. ABELL: It is my pleasure to present to you a person who is no stranger to you, a man not only with a 40-year pin, but a 40-year plaque—Bill Welsh. Bill, would you present the program.

MR. WELSH: Thank you, Penny. The management has asked that I announce that the tennis courts and pool will be reopened promptly after the conclusion of this program.

We are delighted to be here today. As a matter of fact, at my age I am glad to be any place. LC and ARL have spared no expense to bring you the La Posada quartet in chamber recital. I am joined today by Peter Sparks on vacuum. Peter is head of LC's Preservation Office. Bill Nugent, who is Assistant Director of our Automated Systems Office, is going to be playing disk, and Dave "Sam" Remington, who is Chief of our Cataloging Distribution Service, will be on piano.

One night several years ago, in a bar in downtown Casa Blanca, when I could not get olives for my favorite sleep potion, and the air was so heavy the fans could not cut it, I (forgive the personal touch) decided that the two major problems facing research libraries were preservation and resource access. While Sam was playing it again, I headed for Washington to see what could be done.

What I did was consider launching a major effort by requesting a substantial sum for preservation in our 1982 budget estimates. But we did not really have enough facts. I asked that an in-house study be made about the status of our preservation program. The report was completed in May 1980, and although it contained many interesting and useful suggestions, it confirmed that except for our 70 million feet of nitrate film, we lack a program to approach preservation, despite spending five million dollars annually. The study raised serious doubts concerning solutions to the retrospective problem.

At this point in the script, I am assuming that we are all fully informed of the problems and ready to consider possible solutions. In LC's case, a significant part of our 80 million items are deteriorating. Printed information arriving in Washington at this very moment from every foreign port is on self-destruct paper.

The study confirmed that there are a number of different approaches being used for preservation: one is acid free paper, another is mass deacidification, and another is cold storage—all of which relate to the original format. We have microfilming and now optical disk technologies, which provides a new format. But the most successful program that we have under way, and one that I can say that each of you is a leader in, is called planned deterioration.

Now when I first used that term, I thought is was humorous. I am now aware several years later that, in fact, is the current situation. We are doing little to stop the destruction which exists each and every day in our libraries.

I thought we ought to develop a plan of action at the Library of Congress, and I decided to divide the problem into retrospective and prospective. LC will concentrate on the prospective problem, but will continue to work on the retrospective. LC will assume reponsibility for preservation of the U. S. current imprints. With your assistance, I will do what I can to encourage IFLA to develop a program for preservation modeled after the Universal Bibliographic Control (UBC) and Universal Availability of Publications (UAP) concepts.

LC will attack the problem by:

1. Encouraging publishers to use more acid-free paper. You will hear more about that later.

2. Mass deacidification. Some of you know that we have been using the diethyl zinc (DEZ) process. Sometime in late July, using a space chamber at Goddard, we will put 5,000 volumes at a single test. We are optimistic about this. Peter Sparks will tell you about this in greater detail.

3. Optical disk technology is the other means of attack that we want to talk about. We made available to you at the door our Request for Proposal to show that we intend to pursue this vigorously. Bill Nugent will tell you about this, and then Dave "Sam" Remington will talk to you about the Cataloging Distribution Service's experience using optical disk technology.

As a first step in our planning we established three committees. The Preservation Committee was charged to identify the categories of materials that would be suitable for optical disk technology. We are aware that the high cost of color is going to mean that we concentrate on black and white materials. Some of the categories we will address, obviously, will be newspapers and manuscript materials. Next we appointed a technical committee to assist in informing us about the state of the art. The last committee was a "Think Tank", a committee to simply address the problems associated with optical disk technology.

Without further delay, I will turn the show over to Peter Sparks who will be followed, as I said, by Bill Nugent and then by Dave Remington. Then I will come back for a wrap-up.

MASS DEACIDIFICATION

Peter G. Sparks

The objective of our presentation this afternoon is to present some key facts about two technologies that will have a significant impact on library preservation and service in the future. The mass deacidification of paper has been around as an idea for about a decade, and a considerable amount of research and development has been done trying to make it available to the library field. Digital storage on optical disk is a new, rapidly growing technology that shows exciting possibilities for library service and document preservation. My talk will cover deacidification of paper.

The principles of paper making have not changed since its invention in China nearly 2,000 years ago. The basic ingredient of paper is cellulose fiber, which for centuries was obtained from old rags of linen, cotton clothing, and other plant sources. Cellulosic fibers can be separated and processed in water and dried to form a tightly woven paper mesh. In the middle of the 19th century the demand for paper had surpassed the supply of rags, and hense the gradual conversion to wood pulp paper began. The crushing of fibers with the mortar and pestle to make pulp became highly automated with the advent of continuous paper making equipment, and in the case of better grade paper it became a chemical process. The great speed at which modern papers can be made was achieved at the expense of paper permanence. It is the modern chemistry of pulp and paper production that has introduced the acids that cause paper deterioration. Acid producing materials enter the paper in chlorine bleaching and, more seriously, with the introduction of sizing essential to modern printing papers. Earlier paper was sized by dipping in gelatin or natural glue-like mixtures. Modern papers use rosin and alum, which is the principle cause of acidic paper. The use of unpurified wood pulp, groundwood, and environmental pollutants make a contribution.

Before discussing deacidification, I would like to say something about the manufacture of alkaline paper. These papers are made with non-acid sizing systems, have a built in alkaline reserve and use only purified wood pulp. The use of alkaline paper will play a key role in helping to solve the brittle paper challenge. The combination of deacidification technology and the printing of library materials on alkaline paper, could work together to solve this important library preservation challenge by the end of this century.

The Council on Library Resources has played a leading role in stimulating the use of alkaline papers in printing. The CLR Committee on Production Guidelines for Book Longevity issued an important interim report. Their article in Publishers Weekly on books that last has had a positive impact. This past year an American National Standards Institute committee has been established to draw up standards for paper material being used in library publication. It is hoped that this committee will have these standards ready for review and acceptance by publishers in 1983.

Now, some basic chemistry about why paper becomes brittle and how the deacidification agent stops this process. The embrittlement process can be best understood by looking at paper and its chemical characteristics at the molecular level. Higher and higher magnifications can be used to look at fibers and, if you

continue this, into the world of molecular dimensions, you would begin to see the cellulose chains made up of connected rings having specific chemical groups attached to them. This chain structure can be idealized to a ball-stick model so that the cellulose can be viewed as a collection of beads held together by links in a long chain. It is important to keep in mind that cellulose is a natural polymer made up of many similar elements linked together into this long chain, and has dimensions thousands of times larger than small molecules. It is the long chain characteristic of cellulose that contributes directly to the paper fibers strength. With this in mind, let us leave our mental image of the cellulose molecule and talk about alum-rosin sizing.

Alum is a common name for a compound known as potassium aluminum sulfate, or sometimes just aluminum sulfate. Under the influence of high humidity and warm temperatures, alum breaks up into different products by a reaction called hydrolysis. The acid generated by the hydrolysis of alum attacks the cellulose molecule. In a complex series of reactions, the acid eventually leads to the breaking of the chain structure. This chain cutting process yields a paper that is weak and embrittled. There is a direct relationship between the size of the cellulose molecule and the strength of the paper fiber. The application of a deacidification agent to the paper inhibits this chain breaking process. These agents are usually chemical compounds known as carbonates or bicarbonates, which react directly with the free acid in the paper, producing the harmless salt of the acid, carbon dioxide gas, and water. Thus, a simple chemical reaction prevents the acid from attacking and cutting the cellulose chain.

Incidentally, the deacidification of paper that is already embrittled accomplishes very little. Once the cellulose chains are broken, deacidification cannot put them back together again. Deacidification must be applied to papers that still have strength in order to achieve any significant improvement in permanence.

Now, I would like to cover some basic ideas about deacidification, deal briefly with single page treatment, and then move on to mass treatment.

All successful deacidification processes, whether they are single sheet or mass techniques, have some fundamental similarities. In all processes the agent is brought into intimate contact with the paper material. In the single sheet processes, the agent is dissolved in a liquid and brought into contact with the paper in this vehicle. In the mass processes one sees both liquid and gas phase contact. Secondly, the agent chemically neutralizes all the existing free acid in the paper. Thirdly, an alkaline reserve is generated and left in the paper. And, fourthly, all liquids or reaction by-products are removed from the paper before it is returned to circulation.

This leads to eight criteria for judging a good deacidification process:

1. The agent must be uniformly distributed throughout the entire sheet of paper.

2. The agent must raise the pH of the paper to between 7 and 8. The pH value is a relative measure of the acidity or alkalinity of the paper. Values below 7 are acidic, 7 is neutral, and above 7 are alkaline.

3. The process must leave an alkaline reserve in the paper between two and three percent by weight to chemically neutralize any future acidic component.

4. The agent must penetrate the paper in a reasonable length of time so the process is time efficient.

5. The treatment must be permanent, that is, the alkaline reserve should not go away with time and allow the pH of the paper to return to the acid side.

6. The treatment should neither impart odor nor have any toxicological risk to people. The latter is extremely important when you consider the problems of dealing with the public and the implications of putting large numbers of deacidified books in libraries.

7. The treatment should have minimum side effects on the book, i.e., it should not have any noticeable effect on the binding material such as covers, adhesives, sewing thread, etc., and it should not have a measurable effect on colored printing inks.

8. The process should be able to do all the above at a reasonable cost per book.

There are a number of deacidification processes that have been used and experimented with in the last 20 years, for both single sheet and mass deacidification. Single page deacidification is usually applied to rare and important items done by, or under the guidance of, a trained conservator. The technique cannot be applied efficiently to thousands of items at once, although with similar materials, one can develop limited production techniques.

The preservation opportunities available in single sheet deacidification can be characterized as follows. First, we have several processes available that are proven and we know they work. It requires a trained conservator or technician that has been trained by a conservator to do the process. Production is slow. It is used mostly with rare materials, and the unit cost is high.

The attempt to find techniques for treating great numbers of items at the same time has led to much research and development in the last ten years. The objective of this research has been to develop a chemically sound process that is cost effective and which can treat hundreds of thousands of items in any given year. This result, or this effort, resulted in three processes coming under consideration. Dr. Richard Smith has developed a nonaqueous liquid process using magnesium methoxide. The Barrow Laboratory, during its last years, developed a process using morpholine, and the Library of Congress after an exhaustive research program, settled on a gas phase process using diethyl zinc. The Smith process, and the Library of Congress diethyl zinc process, have emerged in the last few years as having potential.

A pilot plant to test the Smith process has been set up and financed by the Canadian National Archives. They have invested in a facility which has been in operation for one and a half years. This plant is presently producing approximately

150 books a day with plans to increase productivity in the future. The chemistry of this process is sound and meets the majority of the criteria discussed earlier for a good deacidification agent. The Canadian Archives has been working to define the limitations of this process on their materials, and by all reports things are going well. This process has an advantage in that it may not require an industrial location for its operation.

The Library of Congress has chosen a gas phase process using a material called diethyl zinc, "DEZ" for short. This process has been successfully demonstrated at the lab bench and on a small pilot plant scale with about 1,600 books treated so far. We are presently working with NASA's Goddard Space Flight Center to buy the engineering required to scale up, using a chamber that would hold 5,000 books, to demonstrate the process at this level. Five thousand books are equal to about 170 shelves of books at LC.

Because of the reactive properties of DEZ, it cannot be exposed directly to water or oxygen. Thus, the treatment must be carried out in a closed chamber so that the books and the DEZ gas can be brought together in an environment free of water and oxygen. Deithyl zinc as a material possesses properties that set its deacidification mechanism apart from others. The molecule itself is very tiny, you can put two million of them across the head of a pin. DEZ moves easily between the pages of a book and diffuses into the paper fibers coming into intimate molecular contact with the cellulose chain to actually react with one of those chemical groups on the chain. In the initial stages of treatment, you get a modified cellulose chain with a DEZ molecule actually attached to it. At the end of the process, the bond with the cellulose ring is broken to generate an alkaline reserve compound known as zinc carbonate. It appears that one of the interesting results of this molecular generation of the alkaline reserve is a uniform distribution of small particles of zinc carbonate throughout the fiber.

The diethyl zinc process is carried out in four simple stages. First, the residual water in the book is removed so that the heat from the reaction of DEZ with water is minimized. Once this is completed, in about one day, DEZ is put in the chamber and left to permeate and react with the cellulose and neutralize the acid for a period of three to four days. At the end of the permeation process, the excess DEZ is removed and reclaimed. This is important because it is expensive. Finally, in the passivation stage the bond between the DEZ and the cellulose is broken and the alkaline reserve, zinc carbonate, is formed. Water is re-absorbed into the paper at this stage and the paper reaches its final equilibrium water content in a few days.

We are packing our books in small stackable milk crates in our binding office. It is necessary to place spacers between the books to eliminate fringe rings that were observed in some of our previous runs. We are also considering marking our treated books with a simple stamp indentifying the DEZ process and the year they were treated. A battery of additional tests will be done on materials in the 5,000 book run. Although initial observations showed no change, we want to pin down the effects of this process on binding materials and on colored printing inks.

We are also enlisting feedback from other libraries in this test. Six organizations—the New York Public Library, the Yale University Library, the

Northeast Document Conservation Center, the National Archives and Records Service, the Columbia University Library, and the Stanford University Library are putting one carton each of their own books in the run. With well coordinated test programs we should be able to report all results by next fall.

Mass deacidification has some significant preservation opportunities. First, we should be able to treat large numbers of materials in any given year. The effects of the two processes I told you about are permanent; they do not go away. The Smith process is essentially available in 1982 if you wanted to invest. The DEZ process should be available in 1984. We also have an added benefit with the DEZ process in that it should inhibit biological growth, and the unit cost should be low.

Library of Congress is developing plans to implement the diethyl zinc process on a larger scale. Our milestone objective is an operational 15 to 20,000 book plant by 1985. To achieve this objective, we have defined five key tasks.

1. Scale-up and test. This is in the very active stage. We hope to complete this part in July of this year.

2. The testing program will become active in late July and be completed by early fall.

3. The process development program is for fiscal 1983 and we will be concerned with automating the process, cost reduction, and plant design.

4. Investigations internally and with outside companies on the future feasibility of building a production plant.

5. Plant construction is presently inactive.

In summary, let me leave you with some encouraging words and images that will highlight the current status of mass deacidification as a promising approach to keeping the "book" available in libraries. The brittle paper challenge in front of us has been clearly defined. We know why paper becomes brittle and we have identified several solutions to prevent this from happening. Manufacturing of alkaline paper and the mass deacidification of library materials to make them alkaline appear to be promising approaches. Specifications have been developed to define what is needed. Concepts have been articulated and scientific resources have been focused on producing workable single page and mass deacidification processes that will greatly extend the permanence of new and stronger papers. We are beginning to understand the assets and the liabilities of these treatments. It is clear that the benefits of mass deacidification can and will play a role in the preservation of library materials that must be kept in the original format.

The future looks encouraging for this preservation technology because we are in the home stretch of making it available for production treatment. With continued engineering and process development, two acceptable processes will be available soon to deal with large numbers of books projected to be treated. The library field will be in a position of choosing the processes they feel to be useful for deacidifying their own collections.

I suggest that an important ingredient in moving this technology forward on an acceptable timetable will be the team work and cooperation in developing the attitudes, programs, and revenue to bring mass deacidification into our libraries as a routine procedure. The Library of Congress and our Canadian colleagues are taking the actions necessary to bring new preservation technologies such as mass deacidification to an acceptable success level. Other research libraries will need to follow this lead if this technology is to find acceptance and use on the national level.

OPTICAL DISK TECHNOLOGY

William R. Nugent

One new component of our preservation program is a pilot project in image preservation and retrieval using optical disks. A description of this pilot project is contained in our formal Request for Proposal, which some of you may have picked up on the front table. The pilot project represents a new approach to prospective preservation and one which I will be talking about today.

We will first discuss the objectives of the pilot project as contained in our RFP. Next we will provide an overview of the technologies of optical storage, describing some of the differences between digital optical disks and analog videodiscs, both of which we will be using, and finally providing some estimates of archival life, costs, and page capacity.

Now, optical storage is a new technology, and one of the challenges of any new technology is not merely to apply it to the obvious, but to find areas where it can provide a new solution. It is very easy to project that digital optical disks will find high use as a digital storage medium for computers, and that analog videodiscs will advance the applications now served by videotapes. But when we analyze their basic capabilities, we find that both of these new optical storage forms are excellent media for new approaches to library preservation, and this may come as somewhat of a surprise.

But first let's talk about the purpose of LC's pilot project, which is to evaluate the use of optical disk technology for information preservation and management, and to determine the costs and benefits of such technology when observed in production. It is important to us that this pilot project be of sufficient size to be extensible. In other words, we do not wish merely to develop a laboratory prototype, but rather to develop a production-scale model project that is a replicable model so it can be used in the future.

LC's RFP has print materials as its primary concern, and these will be stored on digital optical disk. Its second concern is non-print materials, which will be stored on analog optical disk, or, as it is is commonly known, videodisc. The Library's non-print materials include motion pictures in many forms: 35 and 16 millimeter, black and white and color, old color films with fading and unstable dyes, and highly flammable nitrate films. Obviously, there are many preservation problems here. Other non-print materials include television productions on videotape, LC's collections of still photographs in positive and negative form, as well as prints and posters of diverse origin and size. The analog videodisc is the medium of opportunity here since up to 54,000 separate color images may be stored on one side of a 12-inch optical videodisc and selectively viewed a single frame at a time.

But the emphasis of our pilot project will be on printed materials. We will concentrate on the high use current serials. The reason for emphasizing a prospective approach is that we will thereby obtain benefits of user access as well as those of preservation. We feel that a reasonably-sized project which would both prove the technology and be extensible should process about 500,000 pages per year.

For reasons of economy, this will initially be mostly black and white text.

The system that we want to procure has several simple conceptual components. First is page scanning. We want to be able to have a fairly fast process of taking page material, which we have agreed to guillotine, and use single page feeding at a speed on the order of two pages per second. The next process is indexing this material in order to find the material after we have put it onto optical storage and also to link it to computer access methods of retrieval.

The third process is to bring these two together and verify the page image and its indexing. I want to emphasize that in the scanning process we are essentially taking a digital picture of the page, and this picture does not have any character codes in it at all; it is a digital picture. In the indexing process we are adding conventional computer access tools, putting in character coded information for indexing and accessing the page images. So we have two forms of digital information combined together in this technology. We have the picture of the page combined with the character coded indexing. This information is finally transferred to an optical disk or other optical medium, after initially being buffered on conventional magnetic disk.

We want to be able to do on-demand retrieval, and one requirement in this case is to have a very high resolution of data on a CRT screen so that we can read the full page image without eye strain. This means we must have something on the order of 1,200 lines of resolution across the CRT screen as a minimum. Then, finally, we want to have two kinds of printing on-demand: a central facility for extremely high resolution printing that will give us a high quality facsimile of the page itself, and a small desk-top printing device of perhaps lesser resolution that enables the person using the retrieval terminal to carry away copies of the screen images for reference work.

Bringing them all together, we find that we have an image input, an index input, a digital processing system that puts the information on digital disk, and finally a retrieval system that may use conventional computer-based bibliographic reference tools that would link to the appropriate optical page images and bring them back via a high resolution viewing screen and printer. This has been a very brief overview of what is contained in our RFP and what we would like to find offered to us by vendors active in this field.

The reason we are specifying optical storage is that it has two principal advantages. We now have for the first time extremely high density recording technology, roughly between 35 and 350 times more dense than that of magnetic storage. We can now have efficient storage and retrieval of digitized images. We could always have put digitized images on magnetic disks before if we had wanted to, but the expense would have been exorbitant. Now, for the first time, this very high density gives us an economical way to store images. The second advantage of optical storage is that there is no wear resulting from continuous usage, since only a beam of light touches the medium during reading or playback. This advantage makes it an ideal medium for on-demand retrieval of high use items.

Now let's take a look at the technology itself and some of the things that make all these benefits possible. Optical disk and optical storage technology, generally, is

high density optical recording of digital information at the wavelength of light. This almost tells the entire story by itself. It is high density. It is optical, which means that the processes use light and reactions due to light. It is digital information not analog, and its density is such that we are recording our codes on the disk at very small areas equivalent to those of the wavelength of light itself.

Optical storage is basically a laser technology and a metal thin film technology. Lasers are used to create the bit patterns on the disks. Different lasers can concentrate light beams in all colors, but a specific laser will create only one color in a very narrow beam of coherent light that may be focused on an area as small as its own wavelength. Normally when we say optical, we think of visible light, but laser light can extend beyond the invisible infrared range and the shorter wavelengths out to the invisible ultraviolet range. Still, the optical areas that lasers are now using constitute a very narrow band in the total electromagnetic spectrum, so that there is not an awful lot of difference in laser wavelengths. There is only a factor between 400 and 700 as far as visible wavelengths go, so in general the lasers are chosen for characteristics other than wavelength.

Finally, we will discuss how recording takes place. A laser beam is directed through a modulator, which is basically an electronic switch that permits the beam to pass or not pass at a given moment. The beam then passes through some high resolution optics, and at a very small point on the disk, which is coated with a very thin metal film, the heat of the laser beam converts the crystalline state of that metal film to an amorphous state. After the film bubbles up and makes a little volcano, it goes back to its crystalline state. The importance of this is that a microscopically small but permanent metallic deformation has been made on the disk, and this is one of the primary things that will contribute to its relative permanence.

If we were to look at a typical track of an optical disk, we would see bit patterns with very small spacing, again, just around the wavelength of light, with each bit representing a binary "one" or "zero". In the current technology, the track spacings are bigger than the bit spacings, so the new advances in density will come from shrinking the track distances. We will not be able to shrink the wavelength of light since that is a physical constant. If we looked at a typical digital optical disk, we would see that there are several laser beams operating. There is a medium-power lighting beam, and then there is a principal reading beam guided by two outrigger beams, much like a Hawaiian canoe. Those outriggers are designed to keep the reading beam on the track by sensing extremely small departures and causing corrections to be made.

A digital optical disk has an extremely large storage capacity. One side of a 12-inch optical disk can hold ten-to-the-tenth bits of information. Ten-to-the-tenth power is a very large number. It is approximately the number of neurons in the human brain; it is two-thirds of the distance to the moon in inches; it is the number of seconds in 317 years; it is the number of $10 bills in the federal deficit this year; it is the miles traveled by light in 15 hours (and that is traveling at 186,000 miles per second). It is a useful number to think about, and it is a nice decimal-type number which is easy to remember. When we use it to describe storage capacity in bits, ten-to-the-tenth bits is, as we have said, the capacity of one side a 12-inch optical disk, which is a convenient reference because one side of a

12-inch optical disk is equivalent to about one-fifth of a 14-inch optical disk as produced by Xerox (which Dave Remington will be talking about) and is equivalent to about one-tenth of a 14-inch optical disk of the type RCA is developing. It is equivalent to about two high-density magnetic disk packs of the 3350 dual density type, each containing 365 megabytes and ten disk platters. So, with respect to even the newest magnetic disk technology, there is a tremendous capacity advantage. Or, using another optical storage configuration, that of an optical plate as opposed to an optical disk, three five by five-inch optical plates of the type produced by OMEX can also hold ten-to-the-tenth bits. This is roughly about 100 books, or maybe three and one-third library shelves of books with 8 by 10-inch pages, scanned about 200 lines per inch.

Now we will address the differences beween digital optical disks and analog videodiscs. This is a point that is frequently confusing, and not surprisingly because similar technologies are involved. Digital optical disks will be used for digital computer data and for high resolution digitized image data such as the book-page image storage application we are concerned with. By contrast, the analog disk or videodisc, as it is more popularly known, is essentially a television technology; the digital disk is essentially a computer technology.

If we take a look at the differences, analog disks are primarily for entertainment and instructional media, movies and interactive training courses. They are produced by a mastering process in which a master is made with a laser, and then copies are stamped out by either compression or image molding, much like phonograph records are. These are fairly accurate copies, but they do have errors and would be unsuitable for digital information, and there is no possible way of putting error correction in a strictly analog signal. There are some little tricks that can be done with error compensation and drop-out compensation, but not anything in the sense of true error correction.

On the digital side, however, we are dealing with a conventional computer-type technology for data recording. Each disk is produced one at a time by a so-called "draw" (direct read after write) technology, so each one is an original. Then, using well established computer principles, error detection and error correction can be performed. Now error detection is very important for preservation, because this is what provides the extended life capability. We can electronically detect in ten or 15 or 30 years that a disk is suddenly beginning to degrade, and can make a recovery copy which will be fully as accurate as the original.

If one were to look at a typical optical disk, it would be very hard at first glance to tell whether it was analog or digital. Both would have the same shiny surface and would look very similar. If one were to look at a Xerox 14-inch optical disk, one would see the typical rainbow colors that are associated with it, just because the track density is so high that the disk, in effect, acts as a diffraction grating—it does make rainbows. If one were to look at a Pioneer or Sony videodisc, which will contain either 54,000 separate images or 30 minutes of a motion picture, one would see that it, too, generates rainbows because, again, the track density is very similar. The real way to tell the difference is by looking at what is on the disk itself.

On an analog disk, we have pits rather than bits. The difference between bit

and pit is that a pit has a variable length to it. The length is an analog parameter corresponding to frequency modulation coding of the video information. So, to make a long story short, with digital disks we have fixed length bits and with analog disks we have variable length pits.

Finally, let us examine the estimates of archival life, costs, and page capacity of digital optical disks. Currently the estimates, depending which vendor one talks to, will be in the range of ten to 30 years. LC will be performing its own life-cycle testing on this medium, and one of the problems now is that since the technology is so new, we cannot correlate high temperature, high humidity accelerated life testing with what happens under real-time circumstances. At the moment we think that 20 years is a reasonable ballpark estimate of archival life. But, the more important thing is that one can recreate that information after 20 years and put it on whatever new medium the technology has available. Again, this is possible because digital technology has error correction and detection.

Costs of digital optical disk storage are going to have to be competitive with magnetic disk storage because the major marketplace for optical storage technology in digital form is going to be in computer storage. Right now computer storage costs about $40 per megabyte, and in about one and one-half years when the next generation of magnetic disks appears, we will expect it to drop to $17 per megabyte. At that point we expect the first commercial optical digital disks to become available. I would be very surprised if commercial producers did not try to achieve a two-to-one cost advantage, so I would estimate about $8 per megabyte for the first commercial optical disks.

Page capacity is dependent on how many lines per inch one wishes to scan and whether one wants colors or half tones, and what the page sizes are. If one were to observe a segment of a digital optical disk corresponding to the size of a pinhead, two page-images could be stored on this segment. A pinhead, typically, is about 1,500 microns across, or 1.5 millimeters. So this gives a rough idea of what the compression ratios are in this technology. To approximate what we can expect in terms of page capacity, we would say that for 200 lines per inch scan density and an 8 1/2 by 11-inch page size, we would expect about 26,000 pages per ten-to-the-tenth user bits. If we advanced that to 500 lines per inch, we would find that the capacity came down to around 2,800 pages. Half-tone information, which is to say black and white photographs and color, subtracts quite a bit from page capacity. There is substantial variability here, too, because it will make quite a bit of difference, for instance, if one wishes to digitize a flat painted poster or a finely detailed color aerial map. There will be many variables in half-tone and color that are not present in the black and white text material with which we are primarily concerned.

There are some rules of thumb for required scan density. We find that 200 lines per inch is good enough for most large-type book pages and office memoranda. Three hundred lines per inch is probably necessary for scientific text, and according to Dave Remington's results which he will be presenting, 480 lines per inch, which is the current Xerox technology, produces nearly perfect catalog card images which are essentially indistinguishable from hot metal printing. So there is a range of selection and it really depends upon the size of the page and the details one wishes to preserve.

How much detail do we need? Well, at close reading distances a person with normal vision can resolve about 330 lines per inch optically. But we are digitizing material and that imposes a penalty factor on us so that something on the order of 490 to 550 lines would be required to get the equivalent visual resolution. But we feel that reasonable limits are between 200 lines per inch and 480 lines per inch.

We have two great opportunities in this new technology. There is a storage and retrieval opportunity and a preservation opportunity. In the retrieval area, it is random input and access, just like the magnetic technology, magnetic disk. It is very timely initial access, we do not have to wait for processing since once we write it we are able to read it; it is always available. User access time is more than that of magnetic disk, but it is not unreasonable. It is about eight to ten seconds typically, and we have extremely high storage density, which we feel can be very well exploited in information retrieval and reference work.

For preservation, which is most important for the purposes of this project, we believe we will have a very stable storage medium chemically and optically. We have the possibility of electronic monitoring of data quality. That means as the reflectivity of that disk changes in character, we can sense it is degrading and change it to a new medium, to a new recording, before that becomes a problem, and no quality is lost in the transfer. This is unlike microfilm, where every time it is copied, it gets worse. Finally, no physical contact takes place, which means that optical disks can be used indefinitely.

We do have a project plan. Starting in August of this year, we hope to get our first products in the analog videodisc that will be used for non-print materials: the prints, photographs, and motion picture material that will be selected from LC's collections. In January 1984, we expect to have the full optical digital storage system available to perform the pilot project which rquires that a minimum of 500,000 pages per year of test material be processed.

It is important to note that this is not LC's first optical disk project. Our next speaker, David Remington, will be telling us about a very successful project that he has been directing using optical disk storage.

So, that is the essence of our pilot project. Those of you that have picked up a copy of our RFP may want to read further about it.

PRACTICAL APPLICATIONS AT THE CATALOGING DISTRIBUTION SERVICE

David G. Remington

In addition to providing some atmosphere at the beginning, my job here is to tell you that everything Bill has been talking about is real. We have had a very interesting last three and one-half years in the Cataloging Distribution Service. We have five and one-half million master cards in our file which we have used for the last 80 years to create sets of cards for customers who ordered them. We are in the process of putting those five and one-half million images on one side of about 36 optical digital disks, about 200,000 images per disk.

This project has taken quite a while. It is the first one, as far as I know, to actually bring together in a single production system image storage, retrieval, and display, based on optical disk technology. Not only are we inputting five and one-half million images, but we have the ability to enhance those images.

We have a preservation problem in the Catalog Distribution Service that is monumental. We lived in the Navy Yard for a number of years until last year, and had a number of pipes burst and a number of leaks in the roof. During one disaster, some 40 years-worth of master cards were partially damaged. With this technology it is going to be possible to take many images that have been damaged and enhance them so that they can be, in effect, restored to their original condition.

We have two image input scanners to load images into the system. We use the input scanners to capture the original card image. In the case of a damaged card thresholding techniques are used to eliminate the stains or marks which are not as dark as the text itself. The implications of this for document storage, demand printing, and enhancement of the originals, is significant.

The system provides for storage of images at high resolution and random retrieval. One of our major reasons for inputting and printing at 480 lines per inch, which is about 180 lines per inch more than the highest resolution currently available with laser technology, is the difficulty of capturing and printing Chinese ideographic characters, especially their delicate horizontal strokes. The input process needs a high resolution terminal for image display to determine that we have properly scanned the image, and to be able to read the image well enough to accurately tag it with the LC card number, which is used to retrieve the images once they are stored. The tagged images are stored temporarily on magnetic disks which hold about 11,000 images. The contents of 20 high density 300 megabyte disks are contained on one side of one optical disk. An optical disk formatting and preparation station is maintained by the contractor, Xerox Electro-Optical Systems. We are able to store 200,000 card images in digital form on one side of one disk. The optical disk is housed in a cassette. Images are retrieved from optical disks in batch mode using a read only disk drive, similar to players used for magnetic disks, but using laser light instead of a magnetic arm. Image data could be online, as well as off-line.

On May 10, 1982, we expect to receive delivery of the first optical disk drive (read-only player). Within the next week and a half we expect to be retrieving

images from the disk in an acceptance test mode and printing them in virtual facsimile in sheets of six at two sheets per second.

We have two minicomputers controlling the input and the output subsystems. When images are needed from the off-line system, we mount a print request tape on the output minicomputer which retrieves from magnetic or optical disk and drives the high resolution and high speed printer. We are able to print two sheets (six images each) per second at 480 lines an inch, printing high-quality images on demand.

The purpose of the optical disk pilot project mentioned earlier is to deal with image data. Our experience with the Cataloging Distribution Service optical disk system gives us confidence to proceed. We know now what the problems are. We have had three and one-half years of intensive effort to get this technology up and to make it work in a system. We believe that if we can do it for five and one-half million card images, we will not have a huge problem moving to a system managing the larger page-size image. We face today the possibility of the user not only being able to sit down in front of a bibliograhic search terminal, but also to link that bibliographic search to the image data stored on optical disk media. Libraries will use this technology to deliver images to users.

Following this very brief synopsis, I would like to mention that in the latest SPEC Kit from OMS (No.82) there is a description in written form of what I just described to you. I would like to turn the program over now to Bill Welsh.

SUMMARY

William J. Welsh

I apologize. I intended to announce at the very outset that we were going to conduct a test, and I will just give you the first question so you can be thinking about it as I make a further presentation. "What is the altitude a satellite must attain to achieve synchronous orbit?" That is the first question.

Well, we attempted to give you an overview of what is happening at LC. I want to emphasize that the mass deacidification test will be in late July. It is the first large-scale test of the deacidification process, and we are optimistic that it will be successful. The next step will be to see how we can use it for additional materials at the Library of Congress on an operational level and how you can make use of it to help you with your problems. You will hear more about that from us in the very near term, we hope.

On optical disks, I think it is clear that we are working with a technology that has many, many advantages. The image enhancement that David Remington showed is an example, and we have done this with a number of different types of material. You can take an old manuscript that is embrittled and discolored, scan it, and the process produces an image that is as good as the original. Preservation, of course, is the obvious point we are addressing.

Of almost equal importance, I think, is the matter of service. Imagine, if you will, that we have a CRT that you can sit down before, call up the bibliographic information, satisfy yourself that you have found the item of your search, press the "enter" key, and then produce that text without ever leaving your chair. There will no longer be a "not on shelf" problem. Maybe that does not bother you, but it bothers us at the Library of Congress.

Consider the space problem. In our situation we cannot entertain any notion about having a fourth library building on Capitol Hill. We must consider miniaturization and remote storage. Optical disks can be stored remotely and the user does not need to know where they are.

Consider the random accessibility of optical disks. One of the problems in microfilming is that random access is not possible. With optical disk technology, one has that capability.

There are a number of challenges with optical disks—I refuse to call them problems—and this is what our "Think Tank" is trying to address. One of these challenges is the publisher role. I assume some of you know something about the ADONIS Project, where six European publishers have joined to see whether they can produce their journals using the optical disk format. LC representatives have met with representatives of ADONIS on several occasions. Although there are still some problems to be worked out—the same technology problems LC is working on—this seems to be one area where other publishers will also find the use of optical disks of interest.

There is a question of what will happen to the hard copy after material has been put on optical disk. That problem will have to be addressed because economy is still one of our driving forces.

There is a question of copyright because as soon as we have this information on optical disk we will have the ability to transmit it elsewhere. What are the implications? We have met at one point with a small group of publishers to try to get them to consider this matter.

Another consideration is organization. Is organizational change necessary within the library when optical disks are introduced? Most of our libraries are organized around special format materials. If you can put everything—prints, photographs, maps, music, manuscripts—in this format, you can change the organization of your library. You will still need your subject and area specialists, but they do not have to be surrounded by the materials they serve.

Functional changes also need to be considered. When you come to your library to study a favorite topic—like Jim Govan with interest in the Second Battle of Manassas—all the information in the various formats (prints, music, manuscripts) can be accessed from one central location; you will not need to go to several reading rooms.

The loading of disks is a particularly interesting challenge. Obviously, to take advantage of this technology you ought to transfer the material to disk as soon as it comes in. We are thinking about taking the copyright deposits and loading them on the disks. This would provide access to that information as soon as possible for scanning and storing. But obviously—maybe not so obviously—this is not the way we have to go in the future. We might have to reload the disk, just as we now hold items for binding, because we have to consider the efficiency of access.

One of the major problems we will face, and this applies to both technologies, mass deacidification and optical disks, is the selection of materials, and a great many decisions will have to be made. In our case we need to ask ourselves whether our primary responsibility is, first of all, to Uzbek materials because we have a unique collection in the country. Perhaps that would be presumed to be our role and we ought to preserve these materials first. More logically, however, might be the materials produced in the U. S.; these should be preserved for the nation. All of us, however, have U. S. imprints in a high degree of duplication.

The question of subject access has been a problem, but it may be less of a problem in optical disk technology. With this technology subject access can be keyed in the disk itself or in the bibliographic record providing the location of the table of contents and of the index. Once you have the bibliographic citation you might call up the table of contents or the index, then the chapter headings. Some of these things will be relatively simple to do and will provide a wealth of information to which we do not now have ready access.

We need also consider the future of classification. If the material for the future is not going to be on our shelves in classified order, then we will have to consider what role classification will play. For the purpose of this discussion and for the next several years, I am assuming that mass deacidification will be applied to a limited number of items currently received that we want to keep indefinitely. This is at one end of the spectrum. At the other end we envision we will use optical disk technology for newspapers and materials that we readily agree we will not need to keep in the original format. Within that whole rainbow there will be literally

many, many decisions and we will probably spend the rest of our life arguing about them. It is premature to put it on an ARL agenda for discussion. But, the future of classification concerns me because when we developed the MARC system we were somehow aware that the classification approach had some use. I think that there is a possibility for further development of the system to adapt to optical disk technology.

The cost of mass deacidification is another factor. Our current estimate is five or six dollars a volume. Perhaps in subsequent tests that cost will come down, but as of now it is significant.

Attitudes toward optical disks are probably one of the largest problems we have to face. Attitudes regarding automation are no longer a problem—at least that has been LC's experience. I think we will be able to adjust to this new technology.

Repackaging is something we want to consider. We have the ability to take materials from one or more disks and compile bibliographies.

Color versus black and white is another consideration. You heard Bill Nugent talk about the cost. I think for the near term most of our experiments are going to be for black and white materials.

Paper handling needs attention. Many publishers do not use conventional printing methods and they do not have manuscript copy. We will consider working with the Copyright Office to see whether the "best copy" which is required for copyright deposit can, in fact, be a magnetic disk copy. We will have to work with publishers on the copyright question. We will have to anticipate that what we are talking about may lead to systematic copying and that we are going to have to pay a service fee.

Distribution is another problem. If LC has a disk, should you have it? The chief scientist of IBM suggests that rather than make one copy we ought to find a way to make multiple copies. In the analog disk this is not particular problem, but it is in the optical disk, because you have to make a copy from a copy. It would be a much slower process, but it will raise a question for the future.

The future of binding materials needs to be studied. If we are going to go the optical disk route or any of these routes, should we be spending as much money as we do now on binding?

There are probably many, many other questions and problems we have not identified as yet. We look to you for assistance in helping to bring these to the forefront. As I said in a letter to Penny Abell, we would like to find a way to begin the dialogue. We are going to be moving ahead and we should not do it without ARL's cooperative effort.

The Library of Congress is aware that we may have the edge in having done some developmental work in investigating some of these technologies, and whatever we do in these areas is certainly going to have a tremendous impact upon the way we all do business. The shape of the library may change with the use of optical disks, and we ought to be able to discuss what we are going to do about it.

DISCUSSION

MR. WELSH: Are there any questions? We have 20 minutes before the pool and the tennis courts open.

MS. MARTIN (Johns Hopkins University): You said you were talking about repackaging and presumably copying from one disk.

MR. WELSH: If you want to produce a bibliography on a subject you can bring all forms of material together. For questions asked of your library you may want to package something that would satisfy a particular need.

MS. MARTIN: It was my impression that at the moment it is really reasonable to do only a single disk at a time.

MR. WELSH: That is generally correct.

MS. MARTIN: Do you have any updated information from the people developing the technology and working with it on when we might anticipate being able to do something else?

MR. WELSH: I don't know. Bill, do you?

MR. NUGENT: There are some promises, but they are very vague and very undependable.

MR. WELSH: We have not really asked that question. We are anticipating there might be a demand and we want to see what the technology can provide. There is no reason why you cannot copy from a disk onto another medium and make a copy from that, but it may not be economically viable.

MS. BATTIN (Columbia University): You mentioned the question of whether we would have one copy at the Library of Congress or whether we would all have duplicates. What would be the advantage of our having a duplicate if the original is easily accessible at the Library of Congress?

MR. WELSH: Presumably, the costs of accessing the disks are still going to be fairly high. I went two weeks ago to talk to people at COMSAT General, to see what the ballpark cost figure was. They are interested in getting into this. They very much want to get involved with libraries, but we are going to have to pay a cost for that, probably much higher than any of us can afford.

MS. BATTIN: Would that be higher than storage costs and equipment costs?

MR. WELSH: It is a fair question; you would have to make a determination.

MS. BATTIN: But the access for the user would be transparent no matter where the disk was stored, right?

MR. WELSH: Yes.

MR. VASSALLO (University of New Mexico): Have you addressed the issue of compatibility of various systems that are evolving with the system that ADONIS expects to use?

MR. WELSH: What we have done with the RFP, as a result of the work of the Optical Disk Storage Technology Committee, is to try to spell out our needs and have the industry submit their proposals to us, either for a single system, or a set of components. The session that I had with Peter Urbach made it seem that they were at about the same stage we were, and that they did not, in fact, have any more information about this than we do. What they are apparently doing, Paul, is a marketing survey to judge the level of interest.

I should have mentioned this, Pat; they are very much aware of the problem of accessing the data. If they, for example, chose to market through the British Library Lending Division at Boston Spa, then all of us would have the problem of how we would access it. So they did some exploration in this country, using Cuadra Associates to see what the market was, to see if any possible customers would want, for example, a library in this country to serve as an agent for them. I assume that some of you must have been approached on the subject.

MR. WYATT (University of Rochester): Bill, have you had conversations about this program with other governmental agencies such as GPO?

MR. WELSH: We have had discussions with the National Archives, because their problem is even more difficult than ours. We have not talked with GPO. As a matter of fact that did not occur to me. It probably should have.

MR. WYATT: I can see a great many implications for governing structures within libraries and library organizations, with this kind of technology. I wonder what thought LC has been giving to what this kind of program will do to its internal governing structure; and secondly, is there a possibility there may be a place for cooperation, not only with ARL but between the Library of Congress and the various state libraries in this kind of production?

MR. WELSH: We talked to the Chief Officers of State Library Agencies (COSLA) two weeks ago, and we outlined what we are going to do. We did not specifically address the governance question, because that problem seemed to be one of the principal reasons why the National Periodicals Center was killed. And that is not being entirely facetious. I am aware that that will be a very significant problem, but we have a number of technical problems right now that I prefer to address.

I do not have an answer to the governance question. The Network Advisory Committee has labored long and hard on this question. I will also have to talk with Roland Brown about it.

MR. HEYNEN (ARL Staff): If it is true, as you think it might be, that you will get digital input, that is, publishers would be depositing tapes rather than hard copy, it is a different project. The opportunities are enormous because you are creating a data base rather than simply page storage. Have you thought about the implications?

MR. WELSH: We have not really done any testing of using publishers' tapes, other than mentioning that as a possibility with the Executive Committee of the Association of American Publishers. We will have further discussions with them on June 17, at a meeting where this problem will be addressed. I do not know that there is any technical reason why that could not be done. If we can offer some advance guarantee of how we will use the tapes—because it does raise the question of copyright—we should not have an insurmountable problem. And I assume there will be some royalty system developed in very short order.

MR. WALTON (University of Colorado): You were talking about 20-year life expectancy for the disks, but at the same time you said as the laser reads it, it does not damage the surface. What is it then that deteriorates?

MR. WELSH: Bill said that, and he said something else almost immediately, which may have been overlooked. If, for any reason, the disk deteriorates—and we have no evidence whatsoever that it does—we can make another copy of it and the copy will be as good as the original. Do we have information, Peter, on what happens to the disk?

MR. SPARKS: What happens to the disk happens in the area between the little pits that you saw on the slide. That area is a reflector, and it stops reflecting the laser back, and that is how the disk degrades. The pits do not cause the problem. The problem is simply oxidation of the surface between the pits. It is a very well-known process.

MR. DE GENNARO (University of Pennsylvania): How do you foresee the user gaining access to this? Is it through the CRT, or do you print it off with a laser printer and hand the printed copy to the user?

MR. WELSH: Both. As I said, we envision having one CRT at your desk, wherever that desk might be. You search the bibliographic information, get the citation you want, and then pull up the image of textual information on the screen. If you want a hard copy, you have the capacity to print a hard copy.

MR. WEBER (Stanford University): I am interested, Bill, in how much more indexing you will be doing in this test. You cited chapter headings, index, table of contents; will all of that be covered in the indexing?

MR. WELSH: Yes, we have a special subcommittee headed by Lucia Rather that is working on this now. Also, Pauline Atherton Cochrane is working with us on a project quite apart from this, but very much related to it, to see whether we can introduce a considerably greater number of "see also" references that would help in the process, as well.

MR. WEBER: Is this likely to increase the cost ten percent or more?

MR. WELSH: Obviously, we do not know as yet, and it depends upon the level of input. If you can have the person who is doing the scanning routinely punch in the code for the table of contents and punch in the code for the index, I do not see that that appreciably increases the cost. Somebody must sit there, with the present technology, and turn an item page-by-page. Now even with a different

technology, or with magnetic disks, we have to stop the process and turn pages manually but this seems to be fairly routine. Everything we do in the library, even routinely, however, has a cost associated with it. The chapter headings, it seemed to me were another possibility. The table of contents, of course, would give you the same data.

MR. WEBER: It strikes me as an interesting possibility to indicate in the MARC tapes LC distributes the extent to which the items represented were coded or indexed in depth. Then even if a local library did not have access to full indexing immediately, it would know that indexing was available.

MR. WELSH: Good idea, and as far as I know we have not yet considered that. What we are doing is loading the index into the disk itself, but since it could be a simultaneous process, I see no reason why technically the indexing information could not be added to MARC records if that were necessary.

MR. DE GENNARO: Has Dave Remington thought of putting the MARC file on one of these disks and distributing it, and suddenly putting all of the networks out of business?

MR. WELSH: I do not know whether Dave has thought about it. He has not mentioned it to me if he has.

MR. REMINGTON: This is to answer that question. Probably the first answer is, we might use the disk storage to get out of the enormous amount of tape handling we are into now. But, because few people have the technology to play back the disks, we could send them out all over the place and people would hang them on the wall, and things like that. So, I do not see the second part of your question as happening. What will happen will depend on the costs of electronically transmitting MARC data versus the cost of equipment that would read an optical disk. I think the new technology is going to have a lot of impact on storage; for example, to store MARC records on a disk and take them off and put them back into a magnetic medium to change them. Maybe we shall achieve some very, very significant storage savings there, but I do not forsee the second part of your question as happening; I do not see that at all.

MR. WELSH: Along that line, Dave, one thing that does seem to have a high degree of certainty is the impact of this technology on microfilming. I think I mentioned, in our 14 years of the Brittle Book Program, we have filmed 150,000 volumes at a cost of $4.25 million. Twenty-eight dollars per volume is the cost, overall. The result leaves us with all the limitations of microfilm. The first test of the optical disk technology will be on periodicals. I think over the long haul, and certainly in the short run, that will have an impact on microfilming. As a matter of fact, several articles have been written on that subject already expressing the same opinion.

MR. RAWLINS (Pennsylvania State University): The second part of Dick's question relates to the fact that the people who manufacture this equipment indicate that they are going to avoid distribution of it for use in offices during in the next two to three years. Therefore, there is a corollary to what Dick is saying. Doing what Dick suggests—distributing a full set of MARC records on disk—means

we then get into distributing processing systems for the purpose of establishing bibliographic control systems. This would, therefore, afford the opportunity even to the smaller libraries—those outside the research library community—to have access to this information locally.

MR. WELSH: Well, we have mentioned the manufacturers and producers before. Despite their optimism, I do not think there is any way this technology is going to be widely available within the next few years. I think if it were the manufacturers would be farther along right now. There are a small number of firms that have already announced their capability. We are sending the RFP out to what, 22? What is the number, Bill; do you remember?

MR. NUGENT: That is about the number.

MR. WELSH: We have heard rumors about, obviously, big ones: Phillips, IBM, RCA, and the like. I do not think this new technology is going to change the world all that quickly, but it is something we have to consider certainly for the longer term at least.

MR. RAWLINS: Phillips is distributing such a system in Europe.

MR. WELSH: In the professional literature of just a few years ago you could read of the use of just one side of a disk and since then, the use of two sides, and then four disks, and now there is a proposal to hang 1,000 disks on a system. This will change the way we do business.

MR. TOOMBS (University of South Carolina): Would you care to comment on the cost of converting film to videodiscs?

MR. WELSH: No. Bill, do you want to comment?

MR. NUGENT: Film is one of the easier mediums to convert, because it can be done automatically without human intervention. There is a $3,000 mastering charge, possibly another $1,000 setup charge, and then roughly about $10 per disk for production.

MR. WELSH: Remember Bill's figures refer to a two-sided 14-inch disk, holding about 95,000 pages, or about the equivalent of 10 shelves of library books, 316 books, 300 pages per book. So, we will still have a really big library, but it will look different.

MR. STAM (New York Public Library): What about the possibilities of enhancing images of defective film in the transfers?

MR. WELSH: As I said before, we have seen demonstrations of this, and I do not see that we have any great problem. That will probably have to be addressed item-by-item, but we have seen print-outs of enhanced optical disk images of some manuscripts, and the process was remarkable.

There is one other aspect of the technology too. In maps it has the capacity for color separation. You know each color in some maps means something different. You can separate the colors in this process and produce maps in each separate color, if you would.

Image enhancement is one of the things that intrigued us most because it demonstrated that we can restore materials through this technology. We cannot do it with the mass deacidification because degradation has already taken place. As Dave demonstrated, we have done image enhancement with our own catalog cards. And the point is, we have really done it; we have seen it happen.

MR. BILLINGS (University of Texas): This is such a wonderful show; how about the possibility of putting it on film or slide tape, and letting us share it with our staffs?

MR. WELSH: That is a good note to close on. We will do that.

Thank you, thank you, thank you.

MS. ABELL: Thank you, Bill, for putting together a very stimulating presentation.

BUSINESS MEETING

Report of the Executive Director

MS. ECHELMAN: In the last six months, activity at ARL has ranged from busy to frantic. For the Executive Office staff, the schedule depends in large part on events initiated by or impinging upon the legislative, regulatory, and federal administrative processes. In general, the Washington situation relating to library and higher education programs has not changed much since last October; in specific, it changes daily. While we have communicated several times with the entire Membership, by memo or the ARL Newsletter, on legislative and other federal matters, we have concentrated our communications efforts on selected members of the ARL Legislative Network whose representatives or senators are critically situated to affect issues or actions that arise at a specific time. We have prepared testimony on a range of library and higher education programs, essentially recommending funding levels equal to those of the 1982 Continuing Resolution. On May 6, Peter Paulson will present ARL's 1983 recommendations for funding of library programs to the Senate Labor-HHS-Education Appropriations Subcommittee. Similar testimony has been submitted in the House Appropriations Subcommittee. Our recommendations for Titles I and III of LSCA and Title II Parts A, B, and C of the Higher Education Act are in concurrence with those in the April 19 ALA Washington Newsletter, and are also supported by a major Washington coalition of education organizations, the Committee for Education Funding. CEF's recently released budget impact survey contains information on library programs prepared by ARL and ALA staff.

The testimony Peter will present also directs Congressional attention to the effect on research libraries of diminishing or deleting funding for two other HEA titles: IV-A, College Work-Study, and VI-A, International Studies. In support of Title IV-A, we point to the fact that students worked 39.5 million hours in college and university libraries in 1978-79, and that students make up 22 percent of the work force in ARL libraries, which rely heavily on federal work-study funds to pay their student assistants. Title VI-A provides funds for the study of other countries and regions and of foreign languages. Some of the money provided in this program is critical to the maintenance of library resources supporting these studies; 38 ARL libraries are on campuses with at least one area study center funded by Title VI-A.

ARL has also supported, by testimony, letters, and other appropriate efforts, 1983 appropriations for the Library of Congress, the National Endowment for the Humanities, the National Center for Education Statistics, and the National Commission on Libraries and Information Science. In addition to the Committee for Education Funding, we have worked extensively with two other Washington-based coalitions: the National Humanities Alliance, a group of scholarly and education associations formed to insure retention of adequate funding and programs at NEH; and a coalition of associations representing writers, artists, museums, and libraries working for reform of the Internal Revenue Code to allow creative artists and scholars to take market-value based deductions for contributing their works to museums and libraries.

This issue is now at a crucial juncture. Senator Max Baucus will work to

incorporate his new bill (S.2225) on this issue as an amendment to tax legislation being considered by the Senate Finance Committee, if sufficient prior support by other committee members can be assured. Thanks to those of you who responded to our telephone calls asking you to contact Finance Committee members in your states, I can report guarded optimism that this legislation will pass the Finance Committee this year. We are all grateful to those of you who really went the extra mile to contact your Senator; we know that at least one member of the Finance Committee became a co-sponsor of the Baucus bill as a result of the effort of an ARL director. If any of you have contacts on the Finance Committee that we may not know about—a relative or friend who works for one of the members, for example—now is the time to make a call. It is only fair to remind ourselves, before we erupt in jubilation about this, that a similar bill passed the Senate several years ago but was eliminated in House/Senate Conference.

Before moving on to other matters, I would like to remind you that NEH did relatively well in its FY 1982 budget, thanks in large part to the efforts of Representative Sidney Yates of Illinois. It would be a very courteous gesture on the part of those ARL directors whose libraries have received NEH grants to write Representative Yates a thank-you letter. We have just recently learned how seldom legislators receive thanks for such efforts. If you are in a mood to be courteous, Senator Baucus might like to hear from you also.

OMS has been very active during the last six months, distributing to ARL members a report on the "Economics of Research Libraries" meeting held last fall, the Annual Report for 1981, and the assessment report which was discussed in the "Membership only" meeting yesterday. OMS completed the NEH-sponsored Preservation Planning Program; the self-study manual and process are now available to interested libraries.

The ARL Microform Project is humming along. A survey is in the mail to you now. It is both detailed and important, as it will provide information to build a data base describing the availability of records for all major microform sets. A proposal to add a preservation component to this project has been prepared for submission to NEH, and is being reviewed this week by the ARL Committee on the Preservation of Research Library Materials and by the ARL Board.

The April ARL Newsletter fell victim to the loss of personnel at the ARL Office. We took the opportunity to reorganize the support staff functions and to upgrade one secretarial position to that of administrative assistant. This action should enable us to refocus the professional staff assignments so that we can concentrate more effectively on substantive work, such as federal and other external relations, support for ARL committees, and management of projects.

The membership of the Task Force on Library Education has been expanded to include two library school deans, Edward Holley of the University of North Carolina and Herbert White of Indiana University. This is part of the task force's and ARL's ongoing effort to forge a closer, more productive relationship between library educators and research librarians.

The ARL Committee on Interlibrary Loan has asked me to announce that they are working on an update of the 1977 ILL Study. In order to do this, they need to survey the Membership for current information. The survey instrument will be

distributed during the late summer, and the committee expects to tabulate the results in time for presentation at the fall meeting.

I have visited 11 ARL libraries since last October. I would like to take this opportunity to thank the directors and staffs of those libraries, and the many university administrators with whom I conferred during the course of these visits.

And now I would like to turn to a discussion of the ARL budget and the dues for 1983. I would remind you that this is a discussion item only; we will not be voting on the 1983 dues until October. In preparing for this meeting and for the Board of Directors meeting which preceded it, I drafted a preliminary 1983 line item budget, and, together with the data for 1981 and 1982, attempted to do an analysis on a program-by-program basis, so that we could begin to see what we are spending for certain programs. The professional staff provided estimates of the time they spent on seven major functional areas of Association work: Board, Executive Committee, and Membership Meetings; committees and task forces; projects and programs, including OMS support; external relations; internal administration; information and communications; and member relations. We then assigned salary costs and allocated support staff and administrative overhead costs in the same proportion as professional staff costs. Admittedly, this is an arbitrary method of drafting a program budget, but any method is arbitrary, and it does give us a mechanism for looking at where our financial priorities are. The estimated shortfall in anticipated income under expenses is $45,000 for the current program. That would mean a dues increase, projecting two new members for 1983, of $400 or 12.1%.

MS. ABELL: Are there any questions of Shirley, with regard to any part of the report or the functioning of the office generally?

MR. CHAPIN (Michigan State University): What do you mean by member relations?

MS. ECHELMAN: Well, some of it is the time that I spent out in the field, visiting with ARL library directors and their staffs. Some of it is time I have spent on the telephone in one-to-one discussions with directors about issues of interest to the Association or of interest to them. Most of it is my time, and some support staff time, to respond to letters and the like, and the accompanying administrative overhead.

MR. CHAPIN: Where are legislative activities?

MS. ECHELMAN: External relations covers federal relations as well. It is difficult, Dick, to seperate the two, because so much of what we work on with the scholarly societies and organizations like the American Council on Education and the Association of American Universities has to do with legislation.

MS. ABELL: Are there other questions?

MR. FRANTZ (University of Virginia): I just wanted to ask what is the projected average percentage increase for ARL staff salaries this year.

MS. ECHELMAN: We do not know what the cost of living is going to be this

year, but my draft budget includes an 8.5 percent increase of the base salaries pool for next year, including merit and cost of living.

MS. MARTIN (Johns Hopkins University): Shirley, could you tell us a little bit about the procedure that will be followed concerning this draft budget? You said that this is preliminary information, and that we will not be voting on dues until the fall. I have a number of questions, but if I know more about what kind of information you plan to give us and at what point, those questions might not be needed.

MS. ECHELMAN: I did not outline the whole program budget I prepared, because the Board has not yet discussed it fully. I anticipate that we will send budget information to directors sometime in September. I plan to make available both a line item and a program budget. I have always used a program budget for planning and a line item budget for control, and I believe we need to have both in the ARL.

MS. ABELL: Are there any other questions? Then we will move on with the agenda.

Revision of ARL Bylaws

MS. ABELL: The next item on the agenda is a vote on the Bylaws revision. The revised Bylaws were distributed to you on March 22. As was indicated in the cover letter, the purpose of the amendment is to remove gender-specific language from the Bylaws. The Bylaws have been reviewed by the Board of Directors, the Board recommended them to you for passage, and they are now on the floor for discussion and action. Is there any discussion?

MS. SCHNAITTER (Washington State University): I move approval of the amendment to the Bylaws as presented.

MS. ABELL: Is there a second?

MR. VEANER (University of California, Santa Barbara): Second.

MS. ABELL: Is there discussion?

MS. HOADLEY (Texas A & M University): One section, Article 6, Section 4, proposes changing "their" to "his/her". Would it not be more readable to say "director's"?

MS. ABELL: I am trying to see whether there would be any exceptions to that. Where is our author? Sterling Albrecht is 99.4 percent responsible for these amendments. Do you see any problem with that suggestion, sir?

MR. ALBRECHT (Brigham Young University): You are saying the "director's absence", are you not?

MS. HOADLEY: Yes.

MR. ALBRECHT: Sounds good to me. I tried to get them all, but I probably missed some.

MS. ABELL: If it is acceptable to the mover and to the seconder, can we simply accept that by consensus?

MS. WALL[illegible] (State University of New York at Stony Brook): Don't you think it would be better to say, "by the director's" or, "in the director's absence by the associate or one of the assistant librarians," instead of using "its"?

MS. ABELL: Shirley wishes to speak to that. This is still Article 6, Section 4.

MS. ECHELMAN: The reason, I believe, that "its" is used is that the member is the institution.

MS. ABELL: Any other comments? Are you ready for the question? The motion is before you to amend the Bylaws as presented, with the exception of the substitution of the word, "director's" for "his/her" in Article 6, Section 4.

All those in favor please signify by saying "aye." Those opposed? The motion carries. [The revised Bylaws appear as Appendix B to these Minutes.]

Report from the Office of Libraries and Learning Technologies

MS. ABELL: The next item on the agenda is the report from the Office of Libraries and Learning Technologies (OLLT) by Ray Fry.

MR. FRY: Thank you, very much. It is always a pleasure to be with you. I would like to take a couple of minutes to adress four areas. First I would like to comment on what is happening to us organizationally, then a few comments on the 1982 funding picture, where we are with funding in 1983, and an update on two special projects that I mentioned at last October's Meeting in Washington.

Regarding our organization, no legislation has been forwarded to the Hill, as far as we know, to abolish the Department of Education and to create a foundation, though we understand the package is ready to go any time. We also understand that quite a few Congressmen are saying they will not even debate it if it is introduced until after the election. That does not mean, however, there is no reorganization going on within the existing department. There is, some as a result of the consolidation, particularly the elementary/secondary area, where 33 programs were consolidated. Of course, we lost our largest program, Title IV-B, under the Elementary/Secondary Education Act. We are under the Office of Education and Research and Improvement (OERI). The OERI Assistant Secretary is planning some reorganization within the next few weeks, and it affects OLLT directly. At the current time we have two divisions, as I am sure you know, within the OLLT: the Library Division and the Technology Division. We anticipate a third division joining OLLT, thus creating a new division with a new title. The National Diffusion Network, which is an operation to identify and diffuse information primarily on

elementary/secondary education exemplary projects, will, if the plan goes through, be brough into our unit, almost doubling OLLT in personnel.

With regard to the 1982 funding, Congress, as you know, had 45 days to act on the Administration's rescission proposals. That time has lapsed, Congress did not act, and the money is being released. We expect just under $2 million for HEA Title II-A, and the awards to be made on schedule around the first of June. Under Title II-C, we expect to get $5.7 million approximately, and we expect the awards to be made around the end of June. Negotiations, of course, will start much sooner, so those of you who received grants on this program will know before the end of June. We are very pleased that we will be able to use a small amount of that II-C money for dissemination. Two years ago we used $30,000 or $40,000 for disseminating information about the projects. Last year there was a moratorium on printing and audiovisual production, so we had to cancel, but this year the moratorium has been lifted, so we expect (unless we get bad news within the next two to three weeks) to give each II-C grantee this year a small amount of additional money for dissemination. There is still, of course, the possibility of another rescission, but we think it is a possibility and not a probability. As for the 1983 funding, the Administration is asking for zero funding for all the programs in the Division of Library Programs.

We are proceeding with the II-C Regulations as if there will be a program next year. We expect them to be effective around the middle of September for the 1983 II-C program. We have had 24 comments on the Regulations. We expect very little change in them from the version that appeared in the "Notice of Proposed Rulemaking," which I am sure all of you saw. Your survey had a great influence on the revised Regulations.

A quick comment on two special projects. I mentioned at the fall meeting the Cuadra Associates project on the research needs of the '80s, in which 25 practitioners and researchers from the library and information science community have identified the top research projects that are needed. That report has now been published. It identifies the top 20 projects with abstracts and an additional 80 projects are listed, though not with abstracts. We are considering publishing the full report. We have had over 100 requests for this report already, mostly from the library/information science community, but you would be amazed at some of the other requests we have been getting: Chase Manhattan Bank, AMOCO, Texas Instruments, quite a few other organization. There was some controversy over the project, as people thought we were a little presumptuous to try to identify the research agenda for the '80s. It never was intended to be the research agenda, rather it is an agenda from which we hope to do some funding.

Finally, we issued an RFP, in the April 15 Commerce Business Daily, for a major study of library education called, "New Direction for Library and Information Science Education." June 15 the proposals will be due and we expect to fund this project by the end of the summer. It is an 18-month study to identify, describe, and validate the competencies required at the various levels in higher education and within the various specializations. We hope that you will show a lot of interest in the project, particularly the ARL Task Force on Library Education. We think that it can be a landmark study in library education.

Report of the CLR Professional Education and Training for Research Librarianship

MS. ABELL: The next item on the agenda is a report on the CLR PETREL Program from John McDonald.

MR. McDONALD (University of Connecticut): I appreciate this opportunity to bring you another report on the Council on Library Resources Professional Education and Training for Research Librarianship (PETREL) Program. My last report to you described the Council's three initial grants to the library schools at the University of Chicago, the University of Michigan, and the University of California, Los Angeles. Today I wanted to give you brief progress reports on those grants, and then share with you some information on new initiatives that the Council will be taking under the PETREL Program.

You will recall that the University of Chicago, with Council assistance, is offering a new academic program specifically designed for research librarians. It involves working in management, as well as librarianship, and offers a new credential, a Certificate of Advanced Study in Library Management. The program has attracted many applicants, six of whom have been selected and will begin work in the 1982-83 academic year. A news release announcing the names of the successful candidates has recently been distributed. The six are all working librarians with excellent credentials. After a slow start the program has taken hold and Boyd Rayward and the faculty at the Graduate Library School are most enthusiastic about the way the program is progressing.

The University of Michigan program to add to the basic professional curriculum an extra dimension in the form of an intensive internship in a research library is also off to a good start. The first four students stand at the top of the current class of library school students, and the second round looks very promising. Russell Bidlack reports that the 25 to 30 finalists in the second round look very good indeed, substantially above the normal applicants. Of these, Michigan will select five for the program, plus one person from the first round of applicants who was granted delayed admission.

UCLA, as you know, received support for two PETREL Programs: the first Frontiers Conference and the Senior Fellows Program. Several of you participated in the Frontiers Conference at Lake Arrowhead and I hope that you agree with me that this attempt at bringing library directors, library educators, academic administrators, and others together to discuss some of the issues in funding research libraries was successful. The invited papers were provocative, the discussion groups were for the most part lively, and the basis for future dialogue between those who teach librarianship and those who practice it was established. As I understand it, the substance of the conference will be available soon in a publication being edited by Robert Hayes. It will contain the major papers and the essence of the group discussions. The conference was superbly organized and skillfully run; I would expect the published results to be of the same high quality.

The Senior Fellows program is also in good shape, I understand. Thanks to nominations from many of you, the UCLA Library School has been able to tap 12 very able librarians to receive six weeks of intensive education and training designed

to acquaint them with the current context and likely future context of research libraries, and with the best current practice of the management of research libraries. The successful applicants are: Millicent D. Abell, University of California, San Diego; Jean L. Aroeste, Princeton University; Joan Chambers, University of California, Riverside; Richard J. Dionne, Yale University; D. Kaye Gapen, University of Alabama; Clinton N. Howard, University of Kansas; Marcia G. Tebb, Cornell Universty; Beverly Lynch, University of Illinois at Chicago Circle; Ann K. Randall, Brown University; Barbara J. Smith, Pennsylvania State University; and Paul A. Willis, University of Kentucky. Ronald R. Powell, an Assistant Professor at the University of Michigan School of Library Science, has also been selected. Since Dr. Powell teaches courses in academic library administration this seems a very good choice indeed.

I am sure we wish all of these people well. If their experience in this program is as valuable to them as a similar program run by Keyes Metcalf at Rutgers 24 years ago was to me, they can count themselves fortunate indeed. I predict they will come away from the program with just such feelings. Let me simply add that the Senior Fellows program will be supported by the Council for two more years, though in decreasing amounts, and with the hope that it can become self-supporting in the fourth year. In any case, its future successfully depends upon the identification of worthy candidates for the program. Both your recommendations of the most promising senior managers and your willingness to live without them if they are chosen are key elements in the program.

As to the future of the Frontiers Conferences, I can report that the prospects are good. The Council sent a letter to the deans of all library schools granting doctoral degrees and inviting them to send letters of intent if interested in hosting the next conference. Several responses have been received on the basis of which fuller proposals will be solicited. One or more conferences are likely to be funded in the next year or two.

In a new initiative, the Council will set aside $30,000 over a two-year period for joint research projects involving library school faculty members and research library directors. Ten grants of approximately $3,000 each will facilitate research into research library problems of mutual interest to the faculty member and the director. Funds are intended to be used for add-on expenses such as travel, computer time, part-time clerical or student help, but not for salary or overhead. It is expected that faculty members be on sabbatical leave at full or half pay. This is the first public mention of the program, but it will shortly be followed by a letter to library school deans providing all pertinent information.

CLR has reached another decision which I am happy to announce at this time. After a one-year hiatus, the Council will continue its Academic Library Management Intern Program. This decision is based on a survey of former interns, host directors, members of the intern selection committee, and Council staff, and reflects the near-unanimous view that the program has been useful and should be continued, though perhaps with small alterations. I consider this good news and I believe that most of you who have had anything to do with the Management Intern Program will agree.

In a further exploration of the nature and value of internships generally and as one of a series of meetings dealing with various aspects of the PETREL program,

the Council will sponsor a June meeting involving the PETREL Advisory Committee, a half dozen ARL directors, a similar number of library school deans, and a few personnel and staff development specialists. Among other things, the group will consider how library schools and research libraries can work together more effectively to acquaint students with the field of research librarianship and what kinds of structured opportunities for students can be cooperatively offered by larger schools and research libraries.

The PETREL Advisory Committee has met regularly and will meet in the near future to consider new proposals now before the Council. The Council's own Board met on April 24 and confirmed its support for the professional education and training program. I do not pretend to speak for the Council, but in Jim Haas's absence I think it proper to say that the CLR Board has authorized the expenditure of $450,000 in additional support for PETREL activities. Certainly the Council's continued interest and support are gratifying, but as I have done in the past I would again emphasize the Council's interest is not enough in and of itself. ARL directors are crucial to the success of many of these programs. Your role in recommending candidates for the Senior Fellows Program, the Management Intern Program, the Chicago and Michigan programs, and indeed any worthy professional education activity is obvious, but you can help in other ways as well. Your libraries can serve as laboratories for students of research librarianship and you can work to establish lines of communication with library educators not only at your own institutions but throughout the profession. But I do not want to harangue you—you understand all this at least as well as I do and probably better, so let us agree to make it common cause to fulfill the goals of PETREL.

Thank you for your attention to what has turned out to be a somewhat longer report than I intended.

Report on the CLR Bibliographic Services Development Program

MS. ABELL: The next item is a report from Lee Jones of the Council on Library Resources.

MR. JONES: Due to the pressures of time I have prepared a written report for this meeting (see Appendix C), so I will not go into great detail. But I do want to touch on some highlights of BSDP activities since last I reported to you.

In the area of standards and guides, we now have a full set of projects under way which, in the end, will result in a set of telecommunication standards that will allow communication between computing systems. This is based on a standard developed, or advocated anyway, by the International Standards Organization. All of the shared bibliographic service organizations are involved in one way or another, to the extent of implementing the resulting standards.

The first implementation of such a link will be in the area of name authorities. The Name Authority Service is in an advanced stage of planning. You have all seen requirements for that service, probably a year and a half ago. The Name Authority

File Service Task Force is at work right now putting the finishing touches on guidelines for the operation of that service, including how contributors will be selected, the method of operation of the service itself, and definition of quality control procedures. We anticipate that those present participants in LC's Name Authority Cooperative will be asked to help test some of the guidelines before actual implementation.

In the area of subject authority structures, the Mandel/Herschman Report that I spoke to you about last October has generated several proposals for action in the area of subject access. One proposal has been funded to-date, a proposal to enhance the Library of Congress Subject Heading cross-reference structure. Pauline Cochrane has a contract with CLR to work with the LC Subject Cataloging Division in an effort to develop a mechanism for other libraries to submit cross references to be incorporated into the Library of Congress Subject Headings. You will hear more about that project as it progresses.

Early in June there will be a CLR-sponsored meeting in Dublin, Ohio focusing on subject access, generally. All other proposals have been held in abeyance pending that set of discussions. The objective of the whole program, clearly, is to improve subject access for users of online public access catalogs. One of the things we will be trying to do is to identify where the most productive action to be taken lies, and what priorities ought to be established for those actions regarding online public access catalogs. Last year, when we began to define data collection elements for this large set of projects, OCLC embarked upon a comparative analysis of ten online public access catalogs. This analysis is basically a comparison of features. It is now complete, Charles Hildreth is the author, and copies are available from OCLC's Department of Research.

The pilot test of the data collection instruments and the data collection strategies for CLR's Online Public Catalog Project was conducted in November and December of 1981; the results of that activity were reported at a meeting preceding the ALA Mid-winter Meeting in Denver. As a result of that pilot, questionnaires were shortened and sampling plans were altered modestly. The data that actually came out of that pilot suggested that users are much more concerned about subject access in online catalogs than they have ever been in card catalogs. And incidently, users define subject access as any search of a catalog that is not by a known author or a known title, regardless of what we view as a subject search.

We suspected that nonusers would not be using online public access catalogs because they were afraid of them—its technology was more than they wanted to deal with—but that was not what the data suggested. The data suggested that nonusers were just as supportive and excited about online public access catalogs as users were. They simply had not had time to learn to use them, or they did not find a need to use catalogs of any kind in their activity around the institution. The main study is now under way. Data collection is taking place at more than 30 institutions. The preliminary results will be reported at a session during the ALA Annual Conference in Philadelphia. The written report of the study will be available late in the fall.

Now, a general announcement relative to the Council itself. CLR is moving its quarters, effective June 7, 1982. No, we are not going to Maine, as our President

might like to have it, nor are we going to Maui, as I would like to have it. We are moving one block to 1785 Massachusetts Avenue N.W., in Washington, into the National Trust for Historic Preservation Building, which is the old Mellon home. Our new phone number is (202) 483-7474. We look forward to seeing each of you and hope you have an opportunity to visit us.

ARL President's Report

MS. ABELL: In order to keep the report brief, I am going to proceed on the assumption that information in minutes from ARL Board of Directors meeting and ARL Newsletters need not be repeated. Your questions and comments, however, on any such items are welcome.

There are several highlights of Board action at this meeting on which I will report.

First, the Board has, at this meeting, formally adopted a statement of procedure and criteria for evaluation of the ARL Executive Director's performance. The procedure requires the ARL President to conduct an annual review, with representative consultation, culminating in a written report in October. A performance review using ad hoc procedures was reported to the Board in January; the next review will take place this fall. The procedure and criteria will be sent to each ARL director, and I would welcome comments from any member on the procedure, the criteria, or the Executive Director's performance.

Second, I wish to report on actions taken by the Board with regard to the bibliographic utilities. The Executive Director has advised the Board that she heard from members, as had Board Members, a persistent concern that the research library community not be split by the fact that libraries use different utilities, and particularly, that means be found to facilitate access to and exchange of bibliographic data. Certainly, we library directors at work within the respective organizations and the leadership of those organizations have been concerned about these issues. The ARL Executive Director has also voiced concern to these organization leaders. The ARL Board, recognizing the extraordinary significance of several recent major developments, has acted at this meeting to pass unanimously the following resolution:

> The Board of Directors of the Association of Research Libraries commends OCLC and its Research Libraries Advisory Committee for the development and implementation of the new OCLC policy which permits partial use of the OCLC system by libraries that are not cataloging on the system, and which permits full use of the system by libraries cataloging on other systems that will tape-load bibliographic records into the OCLC system. We agree with Roland Brown, President of OCLC, that these steps will, "Go a long way towards facilitating greater resource sharing and collaboration among ARL libraries."

The Board also passed a second resolution which reads:

Whereas, the Association of Research Libraries is committed to strengthening library services to higher education;

Whereas, the sharing of library resources and of bibliographic information regarding library resources among and between research libraries is of fundamental importance in strengthening research libraries;

Whereas, major national interlibrary cooperative entities such as OCLC and RLG have contributed and will contribute to the sharing of bibliographic information and library resources among and between research libraries;

And whereas, the prospects for increasing cooperation between OCLC and RLG seem particularly promising and will clearly benefit research libraries and higher education;

Therefore, the Board of Directors of the Association of Research Libraries commends the steps that have recently been taken by OCLC and RLG to strengthen cooperation between them and offers its good offices to assist in any way possible the furthering of this cooperation in the interests of the research library and higher education communities.

The Board then proceeded to ask the Executive Director to explore with OCLC, RLG, UTLAS, and other appropriate bodies, ways in which ARL might facilitate further efforts to expand access to bibliographic data.

Next, I wish to report very briefly on progress in the development of a planning process for ARL. As I stated at yesterday's Membership Meeting, we are trying to grapple with the complicated problems of needs, capacity, focus, missions. Goals and roles—or better, statements of capacities—are emerging. Issues are being identified by the Board, by the committees and task forces, by individual members, and a great number of issues were raised in the Membership Meeting yesterday. The Board will make every effort to have a framework for your consideration in the fall. We are all eager to get the process outline in shape and increase the proportion of our attention and effort on issues of substance.

And finally, I wish to acknowledge for the record that the "Membership Only" Meeting scheduled for yesterday afternoon, May 5, did actually take place. Reactions reported to me were ones of disappointment, frustration, apathy, caution, satisfaction, momentum, and optimism, sometimes all by the same person, which are just what I would have predicted. Much was aired and little resolved. However, we, the Association of Research Libraries, have a full agenda and a range of options. Open criticism has been legitimized, and I hope will continue to be open where it can be considered and weighed. Each of the issues raised will be considered in some fashion, and I do not doubt that you will see some of the effects of this session in our October meeting.

That concludes my report.

APPENDIX A

Excerpts from the

Commenmorative Program

prepared for the

100th Membership Meeting

of the

Association of Research Libraries

Charter Members of the Association of Research Libraries 1932

Brown University

University of California, Berkeley

*Catholic University of America

University of Chicago

University of Cincinnati

*Clark University

Columbia University

Cornell University

Dartmouth College

Duke University

Harvard University

*Henry E. Huntington Library and Art Gallery

University of Illinois

Indiana University

University of Iowa

Iowa State University

John Crerar Library

Johns Hopkins University

Library of Congress

University of Kansas

McGill University

Massachusetts Institute of Technology

University of Michigan

University of Minnesota

University of Missouri

University of Nebraska

New York Public Library

Newberry Library

University of North Carolina

Northwestern University

Ohio State University

University of Pennsylvania

Princeton University

University of Rochester

Stanford University

University of Texas

University of Toronto

University of Virginia

Washington University (St. Louis)

University of Washington

University of Wisconsin

Yale University

*No longer a member of ARL

Growth of the Association of Research Libraries

1933 Boston Public Library

1936 New York University

1937 University of California, Los Angeles

1938 Louisiana State University

1946 University of Colorado
Vanderbilt University (Joint University Libraries)

1948 National Library of Medicine (Army Medical Library)
National Agricultural Library (U.S. Department of Agriculture Library)

1952 University of Kentucky

1956 University of Florida
Michigan State University
Purdue University
Rutgers University

1962 Boston University
Center for Research Libraries (Midwest Inter-Library Center)
University of Connecticut
Florida State University
Georgetown University
University of Maryland
University of Notre Dame
University of Oklahoma
Oklahoma State University
University of Oregon
Pennsylvania State University
University of Pittsburgh
University of Southern California
Syracuse University
Temple University
University of Tennessee
Texas A & M University
University of Utah
Washington State University
Wayne State University

1964 Linda Hall Library

1967 University of Alabama
University of Arizona
University of British Columbia
University of Georgia
State University of New York at Buffalo
Southern Illinois University
Tulane University

1968 University of Alberta
Case Western Reserve University
University of California, Davis
University of Massachusetts
New York State Library

1971 Howard University
National Library of Canada
Rice University
Smithsonian Institution

1973 Arizona State University
University of California, San Diego
University of California, Santa Barbara

1974 Brigham Young University
Kent State University

1975 Emory University
Colorado State University
University of Houston
University of South Carolina
State University of New York at Albany
State University of New York at Stony Brook

1976 University of Hawaii
McMaster University
University of Miami
Queen's University
Virginia Polytechnic Institute & State University
University of Western Ontario

1979 University of California, Riverside
University of Guelph
University of New Mexico
York University

1980 University of Saskatchewan

1981 University of California, Irvine
University of Manitoba

ARL Leadership 1932-82

ARL Executive Secretaries 1933-62

1932-37	Donald B. Gilchrist, University of Rochester
1938-41	Keyes D. Metcalf, Harvard University
1942-46	Paul N. Rice, New York Public Library
1947-51	Charles W. David, University of Pennsylvania
1952-56	Robert A. Miller, Indiana University
1957-59	William S. Dix, Princeton University
1960-62	Stephen A. McCarthy, Cornell University

ARL Executive Directors 1963-

1963-67	James E. Skipper
1967	Donald F. Cameron
1968-74	Stephen A. McCarthy
1975-76	John P. McDonald
1977-79	John G. Lorenz
1980-81	Ralph E. McCoy
1981-	Shirley Echelman

ARL Presidents 1962-

1962-63	William S. Dix, Princeton University
1963	Robert Vosper, University of California, Los Angeles
1964	Richard H. Logsdon, Columbia University
1965	Edward G. Freehafer, New York Public Library
1966	Foster E. Mohrhardt, National Agricultural Library
1967	Rutherford D. Rogers, Stanford University
1968	Andrew J. Eaton, Washington University
1969	Douglas W. Bryant, Harvard University
1970	Warren J. Haas, Columbia University
1971	Thomas R. Buckman, Northwestern University
1971-72	John P. McDonald, University of Connecticut
1973	William S. Budington, John Crerar Library
1974	Ralph H. Hopp, University of Minnesota
1975	Richard De Gennaro, University of Pennsylvania
1976	Virginia P. Whitney, Rutgers University
1977	Edward C. Lathem, Dartmouth College
1978	Ray W. Frantz, University of Virginia
1979	Le Moyne W. Anderson, Colorado State University
1980	Connie Dunlap, Duke University
1981	Jay K. Lucker, Massachusetts Institute of Technology
1982	Millicent D. Abell, University of California, San Diego

Fifty Years in Research Librarianship
A Selective Chronology*

1932 Association of Research Libraries founded.
American Library Association's Cooperative Cataloging Committee opens an office at the Library of Congress.

1933 First volume of *Doctoral Dissertations Accepted by American Universities*, compiled by ARL.

1934 Congress establishes National Historical Publications Commission (later National Historical Publications and Records Commission).
U.S. National Archives Act passed.

1935 World's first bibliographic center organized at Denver, Colorado.

1936 First IBM automatic punch-card book charging system installed at University of Texas Library.

1937 American Documentation Institute organized.
U.S. Office of Education inaugurates Library Services Division.
First cooperative microfilm project established at Harvard University (beginning of the Foreign Newspaper on Microfilm Project).

1940 ALA issues interlibrary loan code.
Library of Congress assumes work of ALA Cooperative Cataloging Committee.

1941 New England Deposit Library organized (opened in 1942).

1942 LC card catalog first appears in book form as *A Catalog of Books Represented by Library of Congress Printed Cards*, sponsored by ARL.
Farmington Plan first proposed.
First union list of microfilms issued by Philadelphia Bibliographic Center.

1945 Cooperative Acquisitions Project for Wartime Publications, conducted by LC, begins.

1946 *British Museum Catalogue of Printed Books, 1881-1900 (Prospectus)* published, sponsored by ARL.
Canadian Library Association formed.

1948 Farmington Plan begins operation under ARL auspices.

1949 *ALA Cataloging Rules* published.
First separate undergraduate library opens at Harvard.

1950 First teletype connection between libraries (Racine and Milwaukee Public Libraries).

1951 Midwest Inter-Library Center (later Center for Research Libraries) opens in Chicago.
New Serial Titles begins publication.

1953 Seymour Lubetzky's *Cataloging Rules and Principles* published.
National Library of Canada established.

*Based on an outline prepared by Marcia Jebb, Cornell University Libraries

1956 Foreign Newspaper Microfilm Project initiated by ARL.
Council on Library Resources established through a grant from Ford Foundation.
LC printed catalogs become the *National Union Catalog.*
National Library of Medicine (formerly Army Medical Library) established.
Library Services Act passed.

1958 Microprint editions of Pollard and Redgrave's *Short Title Catalog,* Evans' *American Bibliography,* and U.S. non-depository publications begin.

1959 Xerox 914 model brings automated copying to libraries.
National Science Foundation Office of Science Information Service (predecessor of the Division of Information Science and Technology) established.

1961 Public Law 480 of 1954, "Sale of surplus agricultural commodities," amended to authorize LC to purchase multiple copies of scholarly publications, using counterpart funds.

1962 Depository Library Act of 1962 passed.
ARL secretariat established, funded by a grant from the National Science Foundation.
U.S. Department of Agriculture Library designated National Agricultural Library.

1964 Library Services and Construction Act passed.
MEDLARS become operational, one of the first widely used online data bases.
Clearinghouse for Federal Scientific and Technical Information (later National Technical Information Service) established.

1965 Higher Education Act of 1965 passed, authorizing funds under Title II for the acquisition and cataloging of research materials at LC.
MARC format designed.
University of Toronto Library begins converting its holdings records to machine-readable format.
First volume of *National Register of Microform Masters* (NRMM) published at LC, sponsored by the Council on Library Resources.

1966 National Program for Acquisitions and Cataloging (NPAC) begins (funded under Higher Education Act of 1965; initiated by ARL; managed by LC).

1967 Ohio College Library Center (OCLC) incorporated.

1968 *National Union Catalog, pre-56 Imprints* (NUCPP) begins publication.

1969 MARC Distribution Service inaugurated at LC.

1970 ARL creates Office of University Library Management Studies.
National Commission on Libraries and Information Science (NCLIS) established.

1971 LC begins Cataloging in Publication (CIP) program.
First published draft of International Standard for Bibliographic Description (ISBD).

1973 Research Libraries Group formed.

Booz, Allen and Hamilton's *Organization and Staffing of the Libraries of Columbia University,* a study leading to the MRAP program, published under sponsorship of ARL in cooperation with American Council on Education.

University of Toronto Library Automation Systems (UTLAS) inaugurates online catalog support system.

1974 CONSER (Conversion of Serials) project initiated by Council on Library Resources.

Canada Institute for Scientific and Technical Information created from Canada's National Research Council and the National Science Library of Canada Technical Information Service.

1975 National Endowment for the Humanities initiates formal program (later Research Resources) to systematically support basic resources for research.

1976 Copyright Revision Act passed, to be effective January 1978.

Higher Education Act of 1976 passed, authorizing Title II-C, Strengthening Research Library Resources.

Washington Library Network (WLN) founded.

Canadian Association of Research Libraries (CARL) formed.

1978 *Anglo-American Cataloguing Rules,* 2nd ed. (AACR 2) published.

First grants awarded under Title II-C of Higher Education Act.

1979 Standards for University Libraries issued, prepared by ARL and the Association of College and Research Libraries Division of ALA.

1980 REMARC Project announced by Carrollton Press (5.2 million non-MARC records in LC's shelflist to be converted to machine-readable format by 1983).

1981 AACR 2 implemented by most of the North American library community.

CARL incorporates as a nonprofit corporation and establishes secretariat.

NUCPP completed.

APPENDIX B

BYLAWS OF THE ASSOCIATION OF RESEARCH LIBRARIES
As Amended May 6, 1977
(Revised May, 1982)

ARTICLE I - Offices.

The principal office of the Association shall be located in the office of the Executive Director. The Association may have such other offices as the Board of Directors may determine, or as the affairs of the Association may require from time to time.

ARTICLE II - Membership.

Section 1 - Member Institutions:

Membership in the Association shall be on an institutional basis. On invitation of the Association, membership shall be open to major university libraries whose collections and services are broadly based and to certain other libraries whose collections are recognized as having national significance. Major university libraries are considered to be those whose parent institutions broadly emphasize research and graduate instruction at the doctoral level and grant their own degrees, which support large, comprehensive research collections on a permanent basis, and which give evidence of an institutional capacity for and commitment to the advancement and transmittal of knowledge.

Invitations to other libraries shall be issued at the initiative of the Board of Directors after approval of the membership.

Section 2 - Qualifications for Membership:

Qualifications for membership are established by vote of the members and are reviewed from time to time. The regulations in effect at any given time are available on request from the office of the Association.

Section 3 - Termination of Membership:

Regulations for the termination of membership are established by vote of the members and are reviewed from time to time. The regulations in effect at any given time are available on request from the office of the Association.

Section 4 - Transfer of Membership:

Membership in the Association is not transferable or assignable.

ARTICLE III - Board of Directors.

Section 1 - Board of Directors:

There shall be a Board of Directors which shall manage the affairs of the Association. The number of Directors shall be not less than nine nor more than twelve. The President, Vice-President, and Immediate Past President of the Association shall be members of the Board. Directors shall be elected for terms of three years, three to be elected annually as provided in Article IV. Each Director shall be chosen from among the chief librarians representing member institutions of the Association. Each Director shall take office at the close of the Annual Meeting at which the Director is elected and shall serve until the end of the Annual Meeting held at the close of the individual's term of office. Notwithstanding any other provision contained in these Bylaws, an officer of the Association who is serving as a member of the Board of Directors may continue to serve as a member of the Board until the expiration of the officer's term despite the fact that the individual's normal, three-year term as Director may have expired. Any vacancy arising in the Board of Directors shall be filled by the Board of Directors, the appointee to serve until the next Annual Meeting, when a successor for the unexpired term shall be nominated and elected by the members of the Association.

Section 2 - Quorum and Action:

A majority of the members of the Board of Directors shall constitute a quorum. Action by the Board of Directors shall be by majority vote of the Directors present except that, as provided in Article V, Section 4 of these Bylaws, election of the Vice-President shall be by the vote of an absolute majority of the total membership of the Board.

Section 3 - Notice of Meetings:

A regular meeting of the Board of Directors shall be held without other notice than this Bylaw, after the Annual Meeting of the Association, either on the same day thereof, or on the next succeeding day thereafter, at the time and place announced by the President at the Annual Meeting. The Board of Directors may provide by resolution the time and place for the holding of additional regular meetings of the Board of Directors without other notice than such resolution. Special meetings of the Board of Directors may be called by or at the request of the President or any two Directors. Notice of any special meeting of the Board of Directors shall be given at least ten days previously thereto by written notice delivered personally or sent by mail or telegram to each Director's address as shown by the records of the Association. If mailed, such notice shall be deemed to be delivered when deposited in the United States mail in a sealed envelope so addressed, with postage thereon prepaid. If notice be given by telegram, such notice shall be deemed to be delivered when the telegram is delivered to the telegraph company. Notice of a meeting need not be given to any Director who signs a waiver of notice whether before or after the meeting, or who attends the meeting without protesting, prior thereto or at its commencement, the lack of notice. The business to be transacted at, and the purpose of, any special meeting of the Board of Directors shall be specified in the notice or waiver of notice of such meeting.

ARTICLE IV - Nomination and Elections of the Board of Directors.

Section 1 - Nominating Committee:

There shall be a nominating committee of three persons, one to be the Vice-President who shall serve as chair of the Nominating Committee, and two persons to be appointed annually by the President of the Association.

Section 2 - Nomination:

It shall be the duty of the Nominating Committee to select annually as many nominees for the Board of Directors as there are vacancies on the Board to fill. No Director, having served a full three-year term, may be nominated to a successive term. The consent of the candidates to serve, if elected, must be obtained before nominations are accepted. The report of the Nominating Committee shall be distributed to the members at least thirty days before the election.

Additional nominations may be made from the floor.

Section 3 - Elections of the Board:

Each member may vote for not more than three nominees, except for the election of a successor for an unexpired term.

The three candidates receiving the highest number of votes shall become members of the Board for three-year terms.

ARTICLE V - Officers.

Section 1 - Officers:

The officers of the Association shall be a President, a Vice-President, an Immediate Past President, and an Executive Director. The officers, except the Executive Director, shall serve for terms of one year each. The Vice-President shall automatically succeed to the Presidency at the end of the individual's term as Vice-President. The President shall preside at meetings of the Association and of the Board of Directors. The President shall perform all duties incident to the office and such other duties as may be prescribed by the Board of Directors. In the absence of the President or in event of the individual's inability or refusal to act, the Vice-President shall perform the duties of the President and, when so acting, shall have all the powers of and be subject to all the restrictions upon the President. The Vice-President shall perform such other duties as from time to time may be assigned by the President or by the Board of Directors. The officers shall have and may exercise all the powers of the Board of Directors between meetings of the Board, when necessary. Their action shall be subject to subsequent ratification by the Board of Directors.

Section 2 - Executive Director:

There shall be an Executive Director of the Association, appointed by the Board of Directors, who shall serve at its pleasure. The Executive Director shall serve as Director of the Association but shall not be a member of the Board of Directors. The Executive Director shall also serve as Treasurer of the Association and shall be bonded.

Section 3 - Duties of the Executive Director:

The Executive Director shall be in charge of the principal office of the Association and its personnel; shall conduct the Association's administrative affairs; shall be responsible for the execution of all orders of the Board of Directors; shall prepare an annual budget and carry out the activities provided for in the budget as adopted by the Board of Directors; shall have charge and custody of and be responsible for all funds and securities of the Association; shall receive and give receipts for moneys due and payable to the Association from any source whatsoever and deposit all such moneys in the name of the Association in such depositories as shall be selected by the Board of Directors; shall see that all notices are duly given in accordance with these Bylaws or as required by law; shall keep a register of the post office address of each member which shall be furnished to the Executive Director by such member; shall keep all minutes, and issue minutes and reports as required by the Board of Directors; and shall perform such other duties as may be assigned by the Board of Directors.

Section 4 - Vice-President:

The Vice-President shall be chosen from among members of the Board of Directors. Notwithstanding Article III, Section 2 of these Bylaws, the Vice-President shall be elected by the vote of an absolute majority of the total membership of the Board. In the event that no one candidate for Vice-President receives an absolute majority in the first election, there shall be a run-off election between the two candidates receiving the highest number of votes, and that candidate receiving a majority in the run-off election shall be elected Vice-President. In the event the run-off election results in a tie, additional elections shall be conducted until one candidate receives a majority.

ARTICLE VI - Meetings.

Section 1 - Annual and Special Meetings:

There shall be an Annual Meeting of the Association at a time and place to be determined by the Board of Directors. The Association may meet at such other times and places as may be determined by the Board of Directors.

Section 2 - Notice of Meetings:

Written or printed notice stating the place, day and hour of any meeting of the Association shall be delivered, either personally or by

mail, to each member entitled to vote at such meeting, not less than ten nor more than fifty days before the date of such meeting, except as otherwise required by law or by these Bylaws, by or at the direction of the Board of Directors, the President or the Executive Director. When a meeting is adjourned to another time or place, it shall not be necessary to give any notice of the adjourned meeting if the time and place to which the meeting is adjourned are announced at the meeting at which the adjournment is taken, and at the adjourned meeting any business which might have been transacted on the original date of the meeting may be transacted. In case of a special meeting or when required by law or by these Bylaws, the purpose or purposes for which the meeting is called shall be stated in the notice. If mailed, the notice of a meeting shall be deemed delivered when deposited in the United States mail addressed to the member at its address as it appears on the register of members, with postage thereon prepaid.

Section 3 - Quorum and Action:

A majority of the total membership shall constitute a quorum for the transaction of business, and an affirmative vote of a majority of the members voting, but not less than one-third of the total membership, shall be sufficient except as otherwise required by law or by these Bylaws.

Section 4 - Voting:

Each member shall be entitled to one vote on each matter submitted to a vote of the members. A member shall be represented in proxy by its chief librarian, or, in the director's absence, by its associate or one of its assistant librarians. Voting may be by proxy or by mail or by a combination thereof.

Section 5 - Parliamentary Procedures:

The conduct of meetings shall follow Robert's Rules of Order.

ARTICLE VII - Committees.

In addition to the Nominating Committee, such other standing and ad hoc committees as may be needed to carry out the business of the Association may be appointed by the Board of Directors.

ARTICLE VIII - Dues.

Section 1 - Fixing of Dues:

Membership dues shall be proposed by the Board of Directors and shall require approval by an affirmative vote of a majority of the total membership of the Association after due notice.

Section 2 - Forfeiture of Membership for Failure to Pay Dues:

A member failing to pay dues for two successive years shall automatically forfeit membership in the Association.

ARTICLE IX - Contracts, Checks, Deposits and Funds.

Section 1 - Contracts:

The Board of Directors may authorize any officer or officers, agent or agents of the Association, in addition to the officers so authorized by these Bylaws, to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Association, and such authority may be general or confined to specific instances.

Section 2 - Checks, Drafts, etc.:

All checks, drafts or orders for the payment of money, notes or other evidences of indebtedness issued in the name of the Association, shall be signed by such officer or officers, agent or agents of the Association and in such manner as shall from time to time be determined by resolution of the Board of Directors. In the absence of such determination by the Board of Directors, such instruments shall be signed by the Executive Director and counter-signed by the President or Vice-President.

Section 3 - Deposits:

All funds of the Association shall be deposited from time to time to the credit of the Association in such depositories as the Board of Directors may select.

Section 4 - Gifts:

The Board of Directors may accept on behalf of the Association any grant, contribution, gift, bequest or device for the general purposes or for any special purpose of the Association.

ARTICLE X - Books and Records.

The Association shall keep correct and complete books and records of account and shall also keep minutes of the proceedings of its members, Board of Directors and committees having any of the authority of the Board of Directors, and shall keep at the principal office a register giving the names and addresses of the members entitled to vote. All books and records of the Association may be inspected by any members, or agents of members or attorney for any proper purpose at any reasonable time.

ARTICLE XI - Fiscal Year.

The fiscal year of the Association shall be the calendar year.

ARTICLE XII - Waiver of Notice.

Notice of meeting need not be given to any member who signs a waiver of notice, whether before or after the meeting. The attendance of or voting by any member at a meeting, without protesting, prior thereto or at its commencement, the lack of notice of such meeting, shall constitute a waiver of notice by such member.

ARTICLE XIII - Amendments.

Amendment of these Bylaws requires an affirmative vote of a majority of the total membership of the Association, at any meeting of the Association, provided that notice of such meeting and the proposed amendment has been given in writing at least thirty days in advance of the meeting by the Executive Director with the approval of the Board of Directors.

ARTICLE XIV - Dissolution.

Upon dissolution of the Association, the assets of the Association shall be applied and distributed as follows:

a. All liabilities and obligations of the Association shall be paid, satisfied, and discharged, or adequate provision shall be made therefor;

b. Assets held by the Association upon condition requiring return, transfer, or conveyance, which condition occurs by reason of the dissolution, shall be returned, transferred, or conveyed in accordance with such requirements;

c. Assets received and held by the Association subject to limitations permitting their use only for literary, educational, scientific, or similar purposes, but not held upon a condition requiring return, transfer, or conveyance by reason of the dissolution, shall be transferred or conveyed to one or more organizations exempt from income tax as organizations described in section 501(c)(3) of the Internal Revenue Code having as and pursuing purposes substantially similar to those of the Association, pursuant to a duly adopted plan of distribution;

d. Any remaining assets shall be distributed to one or more organizations exempt from income tax as organizations described in section 501(c)(3) of the Internal Revenue Code for any one or more literary, educational, or scientific purpose or purposes, or to the federal government, or to a state or local government, for a public purpose, pursuant to a duly adopted plan of distribution, or by a court to one or more such organizations to be used in such manner as in the judgment of the court will best accomplish the purposes for which the Association was organized.

Adopted January 28-29, 1962
Amended June 22, 1968
January 17, 1971
May 12-13, 1972
May 6, 1977

APPENDIX C

COUNCIL ON LIBRARY RESOURCES
One Dupont Circle • Washington, D.C. • 20036 Tel. 202-296-4757

May 4, 1982

MEMORANDUM

TO: Membership of the Association of Research Libraries

FROM: C. Lee Jones, Program Officer

RE: Report of Activities, Bibliographic Service Development Program (BSDP)

This report is organized according to the major program areas of the BSDP. It is focused on those activities that have transpired since the last meeting of ARL.

STANDARDS AND GUIDES:

1. Application Level Telecommunication Protocol Project - This project under the direction of James Aagaard of Northwestern Univeristy is making steady and timely progress. Review of the work by interested parties including appropriate ANSI committees and Canadian counterparts are all contributing to a stronger piece of work.

2. System Network Interconnection Project - WLN/RLG/LC This project was funded (for WLN and RLG) in January of this year and is designed to develop and implement the other layers of the seven layer telecommunication protocols. LC is seeking funding from other sources to participate in this project and OCLC has recently announced its participation in the specification portion of this project.

The combination of the products of these two projects will be a completed set of protocols for the communication of bibliographic and other types of information between computers. It is expected that there will be applications far beyond the library world for this work.

ACCESS TO BIBLIOGRAPHIC DATA:

1. Cataloging-in-Publication - Library of Congress. The report of the study to assess the utility of CIP will soon be available from the Library of Congress.

2. Network Advisory Committee. The last two programs of NAC have received partial support and have been focused on moving information to the site of need. We have honed our capability to identify the location of required information but we have not made much progress on improving the way we deliver it once it is identified.

3. Discussions continue encouraging the delivery of bibliographic records by each shared cataloging service to the Library of Congress. The issue of whether or not subsequent distribution from LC will be allowed is as yet unresolved.

LINK BIBLIOGRAPHIC DATABASES:

1. The telecommunications project mentioned above involving WLN/RLG/LC, will result in a link between the computers of the three organizations. The first implementation of that link will be the Name Authority File Service (NAFS).

NAME AUTHORITY STRUCTURE:

1. Linked Systems Project - WLN/RLG/LC. The telecommunications project will provide the capacity for computers to interact with each other. The implementation of the link will be in the area of authorities. The three institutions have been modifying their authority systems to allow such a link. That work is going forward on schedule and is expected to be ready for the implementation phase by July or August of this year.

2. The Task Force on the Name Authority File Service is nearing completion of guidelines for the operation of the Service and for the selection of contributing institutions. It is anticipated that those institutions working with the Library of Congress in the Name Authority Cooperative (NACO) will test some of these guidelines prior to actual implementation of NAFS.

SUBJECT AUTHORITY STRUCTURE:

The Mandel/Herschman report on subject access in the online catalog has generated several proposals aimed at responding to the recommendations of the authors.

1. Enhanced Cross-Reference Structure - Cochrane. The only proposal funded so far is a contract for Pauline Cochrane to work with the Library of Congress on a method to enhance the cross-reference structure of LCSH. The system to be developed will attempt to gather cross-reference suggestions from selected libraries.

2. There are plans to hold a two and a half day session focusing on subject access issues and what the BSDP might reasonably and productively do in this area. It is hoped that the meeting will take place in early June. All other proposals have been deferred until after this meeting.

CONSER:

1. Discussions continue to attempt to find a way to share contributions to the CONSER file without regard to the shared cataloging service used.

2. A final grant has been made to the Boston Theological Institute to support communications costs of completing input of theological journals to the CONSER database.

3. A grant to ARL and NFAIS to plan a way to append abstract and index service coverage information to CONSER records has been made and completed. The resulting proposal is in a discussion phase.

BIBLIOGRAPHIC PRODUCTS AND SERVICES:

1. Online Public Access Catalog Evaluation - OCLC. The portion of the planning for the evaluation of online public access catalogs that was uniquely the province of OCLC was an inventory of features of ten such catalog systems. That report, by Charles Hildreth of OCLC's Office of Research, is now available from OCLC. For those interested in online catalogs this is an interesting compilation.

2. Pilot Test of Online Public Access Catalog Evaluation - Five Organizations. A pilot test of the evaluation instruments and strategy was conducted in November and December 1982. Results of this exercise were reported at a symposium immediately preceeding ALA mid-winter.

3. Evaluation of Online Public Access Catalogs - Five Organizations. After modifications in both data collection instruments and strategy, the final data collection phase of the project is now under way. Preliminary results will be reported at a Sunday morning session at ALA in Philadelphia.

4. Microcomputer Bibliography Project - University of Michigan. A project to produce software for a range of microcomputers to allow the claiming of bibliographic records from bibliographic databases has been funded. Individuals will be able to claim records store and sort them into standard bibliographic citation forms for footnotes or bibliographies.

5. Machine-readable Texts in the Humanities - Rutgers University. A project has been funded to identify and record bibliographically machine-readable texts in the humanities. The database will be created on the RLIN system.

GENERAL:

Effective June 7, 1982 the Council on Library Resources will move to new quarters. Our new address will be:

Council on Library Resources, Inc.
1785 Massachusetts Avenue NW
Washington, D. C. 20036

The new phone number for all CLR personnel will be:

202-483-7474

APPENDIX - D

OFFICE OF MANAGEMENT STUDIES
SUMMARY OF 1981 ANNUAL REPORT*

Introduction

The OMS Annual Report provides a review of current Office resources and services used by academic and research libraries to strengthen management and improve performance. As in past reports, the activities of the Office during 1981 centered around the concerns and needs of the nation's largest research libraries.

The economic crisis continues to be libraries' single most pressing problem. The 1979-80 ARL Statistics show that while the membership's total annual expenditures for library materials increased by 91% during the seventies, the gross number of volumes added annually to collections decreased by 22.3%. This is a measure of the impact of inflation which has increased the cost of books by 273% in the last ten years and periodicals by 398%. At the same time federal, state, and local support for higher education is being slashed, energy costs have skyrocketed, and capital investment is not attracting private or foundation support. For most of the nation's academic communities, these factors add up to one of the most discouraging financial pictures in over two decades. Previous short-term cost saving tactics have, of necessity, been followed by substantial reductions in support for central programs of the university, including libraries.

These pressures come at a time when the information explosion and communications revolution place extraordinary demands on research libraries to acquire larger numbers of more expensive and diverse materials and to invest in costly automation and communication systems. There are continuing requests from faculty and students for new services which call for more assistance from a highly skilled professional staff. The costs of new services and equipment require capital investments beyond the means of many individual institutions.

The convergence of these forces has created a tremendous management challenge for libraries as they endeavor to support the scholarship, research, and instructional programs of their universities. This challenge is frequently not fully understood by the university community, in part because of the determination and talent of the library's management and staff in limiting the impact of economic constraints. In many libraries, skillful collection management produces cuts that do not visibly reduce capabilities. Staff frequently contribute extra time and energy to cushion the impact of reductions. Development of better communication with faculty has minimized the impact of interruptions in service that might otherwise adversely affect library-faculty relations. Because many libraries have been able to maintain good traditional service, users and university administrators have frequently been less inclined to support the introduction of new technology for library services, particularly where major investments are required.

*The complete Office of Management Studies Annual Report for 1981 is available from the OMS.

Some of the responses of library managers to this situation are illustrated in their requests for Office resources and services. One approach is better planning, particularly as it relates to introducing and managing change. Forty libraries were involved in OMS self-studies during the last year. Their efforts are aimed at developing better understanding of key issues and creating organizational commitment to new directions. The studies indicate administrators' confidence that library staff can contribute to library development if there is a focus and a process for this activity. The 1981 efforts have resulted, for example, in restructuring technical services, introducing collection management methods, redirecting public services, and dealing with preservation problems.

Beyond management and program studies, most academic and research libraries are strengthening their internal problem analysis and decision making activities. The Systems and Procedures Exchange Center helps engage problems by providing current descriptive information on how research libraries are dealing with specific issues. In the last year the Center issued material on topics such as compensation systems, communication patterns, preservation procedures, user surveys, fees for services, recruitment and selection practices, and specialist positions. Nearly 6,000 SPEC Kits were distributed in 1981. This range of topics and level of use demonstrates the specific interests and energy of academic libraries as they continue to strenthen internal management.

In addition to planning major change and tightening internal management, academic and research libraries are investing in the development of staff capabilities. While financial pressures frequently lead private enterprises to eliminate or reduce training funds, libraries look to training and development as a way to increase personnel effectiveness and productivity. During 1981 over 1,200 individuals participated in one or more of the Office's training and development programs. New programs offered help on topics such as dealing with organizational stress, strengthening public services staff, and developing interpersonal and communication skills required for successful supervision and group problem solving.

These efforts suggest an optimistic appraisal of the future prospects for research libraries. This optimism must be supported by executive vision of ARL directors and fresh efforts from the OMS staff to provide assistance to these organizations. The OMS Advisory Committee worked with OMS staff in conducting a broad review of the Office and its programs in 1981 to encourage this renewal process. (See Section VII of this report for results.) A principal conclusion of the Committee is that the basic OMS program strategy should continue, with several shifts in emphasis. These shifts include conducting more exploratory research on issues of concern to directors, moving from a focus on management process to specific library functions, and adding coverage of financial and technology management issues to the current emphasis on management of human resources.

Before 1975, the OMS was funded entirely by the Council on Library Resources. Subsequently cost recovery, direct financial support by the Association, and grants from other foundations supplemented and extended the CLR support. The ARL Board of Directors moved in 1980 to take a stronger role in financing the Office and decided to contribute roughly 20% of the OMS budget by 1984, moving from a current annual allocation of $55,000 to $110,000 over a four-year period. By making this commitment the Association assures continuity of Office operation. This

in turn will allow long-range planning for OMS programs and the extension of services to member libraries, and will provide an ongoing recognition of the value of maintaining a unique capability to address the management concerns of members in the next decade.

During 1982, OMS priorities will emphasize continuity and renewal of programs. The Academic Library Program studies, the Systems and Procedures Exchange Center, and the Organizational Training and Staff Development programs will continue. At the same time efforts will be made to strengthen the Office's research capabilities and to support the financial management and decision-making capabilities of research libraries. Improving working relationships with member libraries will continue to be a primary focus of the Office's design and operational efforts during 1982. The quality of these relationships—that is, the willingness to collaborate and the ability to influence and to be influenced—will determine the nature and success of the Office's contribution to its constituency.

Highlights of OMS Activities in 1981

1. Forty-one libraries undertook or continued self-study programs during 1981. Most of the libraries participated in the small libraries planning program. Collection analysis and organizational screening remain the most popular programs for research libraries' self-study efforts.

   a. Ball State University completed the Management Review and Analysis Program and sent a report on its study.

   b. The University of the Pacific, Southeast Missouri State University, and the University of Miami pursued studies within the Academic Library Development Program.

   c. Seven libraries engaged in Organizational Screening Programs: Temple, Northeastern, Brandeis, San Francisco State, and Ohio State Universities completed their studies; and Emory and San Jose State Universities began their efforts.

   d. There were nine participants in the Collection Analysis Project in 1981. The Universities of Maryland, British Columbia, Notre Dame, Colorado, Illinois (Chicago Circle), and Michigan, McGill University and George Washington University, and Franklin and Marshall College all were conducting CAP studies. Completed reports were received from Franklin and Marshall and Notre Dame.

   e. Seventeen libraries pursued self-studies within the Planning Program for Small Academic Libraries. Goshen, Transylvania, DePauw, North Park, Hope, Franklin, Huntington, St. Joseph's, Illinois Wesleyan, Lake Forest, and Wittenberg Colleges and the University of Evansville all finished their programs during the year.

   f. The University of Houston, the first participant in the Academic Library Public Services Study, completed its study. A special focus workshop on public services was held at Texas A & M University.

g. Three pilot Preservation Planning Program studies took place at Dartmouth College, and the Universities of Virginia and Washington.

2. A second class of 20 participants was chosen for the Academic Library Consultant Training Program and trained in an intensive two-week workshop. Trainees from both classes participated in OMS training events and worked on self study projects in cooperation with the OMS staff.

3. The Systems and Procedures Exchange Center (SPEC) issued 10 flyer and kit titles, maintained 288 subscriptions, and distributed over 7,500 publications. Nearly 100 requests for information were answered.

4. The Organizational Training and Staff Development Program activities included five basic Management Skills Institutes, one Advanced Management Skills Institute, and 14 other events, including Special Focus workshops.

5. Within the Collaborative Research/Writing Program, intended to encourage and support research and publication by practicing librarians, two papers were issued. Joanne Euster, San Francisco State University, and William Jones, University of Illinois, Chicago Circle, produced the first studies for this program.

6. The OMS Assessment Survey of ARL directors findings revealed that most directors use OMS services, and that they are satisfied with OMS programs.

7. Financial Support was extended by the ARL Board of Directors. The 1983 budget allotment to OMS increases the ARL contribution to $75,000.

8. A meeting on the "Economics of Research Libraries" was held in October, 1981, to initiate a long-range effort to upgrade library financial analysis and planning efforts. Eighteen educators, librarians and researchers attended the day-long event. The OMS planned the meeting, which was sponsored by the Association of Research Libraries and the Research Libraries Group and funded by the Council on Library Resources.

OMS Priorities for 1982

The OMS staff reviews its program annually with the OMS Advisory Committee. OMS priorities comprise operational, developmental and internal requirements. The major focus is upon the program elements described below.

1. Academic Library Program

As the central OMS program, the ALP will engage staff and consultant trainees in 15-20 library studies during 1982. The preservation and public services studies will be made available as requested by member libraries. Five to eight Collection Analysis Project studies will take place. If funding is secured, the CAP assessment process may begin in 1982. A resource sharing workshop sponsored by the New York State Library has been added to the CAP agenda, and other cooperative projects may be requested depending on funding possibilities.

A third class of consultant trainees will be selected and trained during 1982. Study assignments for this class also will begin as projects are identified and training events scheduled. Plans for starting a selection process for a fourth class will be made late in the year.

2. Systems and Procedures Exchange Center

The Center will conduct several surveys, produce 10 kits/flyers on topics already determined, and support participants in the collaborative research/writing program. The Center also will develop methods for selecting and organizing kit materials, and guidelines for library use of kits.

Topics for SPEC kits/flyers for 1982 include: corporate use of libraries, document delivery systems, services to the disabled, book approval plans, public services goals and objectives, classification systems, managerial specialists, professional development and travel policies, collection assessment, and technical services costs.

3. Organizational Training and Staff Development

In addition to maintaining current programs, the training program plans include a series of two-day technical skills workshops to acquaint participants with techniques, methods and resources available in three areas: preservation, financial planning, and performance appraisal. One Management Skills Institute will provide a special focus on planning and managing change in library organizations.

The training program schedule includes three Management Skills Institutes and three others added by special request. There will be one Advanced Management Skills Institute. The three Technical Skills Workshops plus 12 Special Focus Workshops complete the training schedule. It is expected that several management films will be acquired, and training materials will be added to support their use.

4. Research and Development

A top priority for the development area in 1982 is the Economics of Research Libraries project. Results of the exploratory meeting are to be distributed to participants, and the OMS staff continues to study developmental possibilities. One of the major topics for continued research is a general financial planning model.

The Collection Assessment Project will move forward as the four test libraries conduct their studies. The manual for the project will be refined.

The Collaborative Research/Writing Project continues. Selection of topics for new Occasional Papers is under way, as is the process of identifying future participants. More librarians from ARL libraries will be involved in writing SPEC flyers and preparing SPEC kits in 1982.

During 1982, the theme of program evaluation will remain an important concern. The evaluation of OMS programs instituted in 1981 will continue on an annual basis. A major Office goal is to be more responsive to member concerns, and also to solicit expressions of interest in particular topics. This will enable

ongoing revision in programs. Additional advice will be sought from the ARL staff, the ARL Board of Directors, the ALP and other Office committees, and from individual directors and staff members.

Sources of Financial Support for OMS Programs in 1980-1981*

1. Association of Research Libraries	$ 55,000
2. Council on Library Resources	60,000
3. Andrew W. Mellon Foundation	50,000
4. Lilly Endowment	49,640
5. H.W. Wilson Foundation	13,700
6. National Endownment for the Humanities	74,110
7. CLR/Economics of Research Libraries	12,120
8. Interest on cash reserve	20,330
9. Cost Recovery	128,790
TOTAL	$464,190

OMS Program Expenditures in 1980-81

1. Research & Development	$ 11,200
2. Academic Library Program	153,710
3. Information Collection & Dissemination	68,900
4. Training	51,800
5. Separately funded:	
a. NEH Preservation Project	74,110
b. Lilly Small Library Program	49,640
c. Wilson SPEC Distribution	13,700
d. CLR/Economics of Research Libraries	12,120
6. OMS operations, planning, and grant management	29,000
TOTAL	$464,180

OMS Line Item Expenditures in 1980/81

1. Salaries and benefits	$253,137
2. Consultant Fees	8,874
3. Travel	84,513
4. Supplies and Materials	36,035
5. Printing and Duplicating	32,552
6. Equipment	275
7. Other Costs	26,294
8. Grants to Institutions	22,500
TOTAL	$464,180

*Detailed OMS financial reports are regularly included in the ARL Minutes as part of the audited ARL accounting statements. Fiscal year: October-September.

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APPENDIX E

ATTENDANCE AT 100TH MEMBERSHIP MEETING
SCOTTSDALE, ARIZONA
May 6-7, 1982

University of Alabama Libraries
Joyce Lamont

University of Alberta Library
Bruce Peel

University of Arizona Library
W. David Laird

Arizona State University Library
Donald Riggs

Boston Public Library
Philip J. McNiff

Boston University Library
John Laucus

Brigham Young University Library
Sterling J. Albrecht

University of British Columbia Library
Douglas N. McInnes

Brown University Library
Merrily E. Taylor

University of California, Berkeley Library
Joseph Rosenthal

University of California, Davis Library
Bernard Kreissman

University of California, Irvine Library
Calvin J. Boyer

University of California, Los Angeles Library
Russell Shank

University of California, Riverside Library
Joan Chambers

University of California, San Diego Library
Millicent D. Abell

University of California, Santa Barbara Library
Allen B. Veaner

Case Western Reserve University Libraries
Ann Drain

Center for Research Libraries
Ray Boylan

University of Chicago Library
Howard Dillon

University of Cincinnati Libraries
Charles B. Osburn

University of Colorado Library
Clyde Walton

Colorado State University Library
Le Moyne W. Anderson

Columbia University Libraries
Patricia Battin

University of Connecticut Library
John P. McDonald

Cornell University Libraries
Not Represented

Dartmouth College Libraries
Margaret A. Otto

Duke University Libraries
Elvin E. Strowd

Emory University Library
Herbert F. Johnson

University of Florida Libraries
Not Represented

Florida State University Library
Charles Miller

Georgetown University Library
Joseph E. Jeffs

University of Georgia Libraries
David F. Bishop

University of Guelph Library
Margaret Beckman

Harvard University Library
Y. T. Feng

University of Hawaii Library
Don L. Bosseau

University of Houston Libraries
Robin Downes

Howard University Libraries
Binford H. Conley

University of Illinois Library
Hugh C. Atkinson

Indiana University Libraries
Elaine F. Sloan

University of Iowa Libraries
Dale M. Bentz

Iowa State University Library
Warren B. Kuhn

John Crerar Library
William S. Budington

Johns Hopkins University Library
Susan K. Martin

University of Kansas Library
Clinton N. Howard

University of Kentucky Libraries
Paul A. Willis

Kent State University Libraries
Not Represented

Library of Congress
William J. Welsh

Linda Hall Library
Not Represented

Louisiana State University Library
George Guidry

McGill University Library
Marianne Scott

McMaster University Library
Margaret Maggs

University of Manitoba Libraries
Marilyn J. Sharrow

University of Maryland Library
H. Joanne Harrar

University of Massachusetts Libraries
Richard J. Talbot

Massachusetts Inst. of Technology Libs.
Jay K. Lucker

University of Miami Library
Frank Rodgers

University of Michigan Library
Richard M. Dougherty

Michigan State University Library
Richard E. Chapin

University of Minnesota Libraries
Eldred Smith

University of Missouri Library
Dean A. Schmidt

National Agricultural Library
Richard A. Farley

National Library of Canada
Hope E. Clement

National Library of Medicine
Kent A. Smith

University of Nebraska Libraries
Gerald A. Rudolph

The Newberry Library
Not Represented

University of New Mexico Library
Paul Vassallo

New York Public Library
David H. Stam

New York State Library
Joseph F. Shubert

New York University Libraries
Suzanne O. Frankie

University of North Carolina Libraries
James F. Govan

Northwestern University Libraries
John P. McGowan

University of Notre Dame Libraries
Robert C. Miller

Ohio State University Libraries
William J. Studer

University of Oklahoma Library
Not Represented

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Roscoe Rouse

University of Oregon Library
George W. Shipman

University of Pennsylvania Libraries
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University of Saskatchewan Library
Nancy A. Brown

Smithsonian Institution Libraries
Vija Karklins

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Roy L. Kidman

Southern Illinois University Library
Kenneth G. Peterson

Stanford University Libraries
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State University of New York at Albany
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State University of New York at Buffalo
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Joseph Boisse

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Donald R. Hunt

University of Texas Libraries
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Irene B. Hoadley

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David Esplin

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Frank P. Grisham

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University of Washington Library
Merle N. Boylan

Washington State University Library
Allene F. Schnaitter

Washington University Libraries
Charles Churchwell

Wayne State University Libraries
Vern M. Pings

University of Western Ontario Library
Robert Lee

University of Wisconsin Libraries
Joseph Treyz

Yale University Libraries
Donald Engley

York University Libraries
Anne Woodsworth

ATTENDANCE BY THE MEMBERSHIP - NAME INDEX

Abell, Millicent D.	University of California, San Diego Library
Albrecht, Sterling J.	Brigham Young University Library
Anderson, Le Moyne W.	Colorado State University Library
Anthony, Donald C.	Syracuse University Libraries
Atkinson, Hugh	University of Illinois Library
Battin, Patricia	Columbia University Libraries
Beckman, Margaret	University of Guelph Library
Billings, Harold W.	University of Texas Libraries
Bishop, David F.	University of Georgia Libraries
Boisse, Joseph	Temple University Library
Bolles, Shirley W.	Rutgers University Library
Bosseau, Don L.	University of Hawaii Library
Boyer, Calvin J.	University of California, Irvine Library
Boylan, Merle N.	University of Washington Library
Boylan, Ray	Center for Research Libraries
Brown, Nancy A.	University of Saskatchewan Library
Budington, William S.	John Crerar Library
Carrington, Samuel	Rice University Library
Chambers, Joan	University of California, Riverside Library
Chapin, Richard E.	Michigan State University Library
Churchwell, Charles	Washington University Libraries
Clement, Hope E.	National Library of Canada
Conley, Binford H.	Howard University Libraries
Dagnese, Joseph M.	Purdue University Library
De Gennaro, Richard	University of Pennsylvania Libraries
Dillon, Howard	University of Chicago, Library
Dougherty, Richard M.	University of Michigan Library
Downes, Robin	University of Houston Libraries
Drain, Ann	Case Western Reserve University Libraries
Engley, Donald	Yale University Libraries
Esplin, David	University of Toronto Libraries
Farley, Richard A.	National Agricultural Library
Feng, Y. T.	Harvard University Library
Frankie, Suzanne O.	New York University Libraries
Frantz, Ray	University of Virginia Libraries
Govan, James F.	University of North Carolina Libraries
Grisham, Frank P.	Vanderbilt University Library
Guidry, George	Louisiana State University Library
Hanson, Roger K.	University of Utah Libraries
Harrar, H. Joanne	University of Maryland Library
Hoadley, Irene B.	Texas A&M University Library

Howard, Clinton W.	University of Kansas Library
Hunt, Donald R.	University of Tennessee Libraries
Jeffs, Joseph E.	Georgetown University Library
Johnson, Herbert F.	Emory University Library
Karklins, Vija	Smithsonian Institution Libraries
Kidman, Roy L.	University of Southern California Library
Koepp, Donald	Princeton University Library
Kreissman, Bernard	University of California, Davis Library
Kuhn, Warren B.	Iowa State University Library
Lamont, Joyce	University of Alabama Libraries
Laird, W. David	University of Arizona Library
Laucus, John	Boston University Library
Lee, Robert	University of Western Ontario Libraries
Lucker, Jay K.	Massachusetts Institute of Technology Libraries
Maggs, Margaret	McMaster University Library
McBurney, Margot B.	Queen's University Library
McDonald, John P.	University of Connecticut Library
McGowan, John P.	Northwestern University Libraries
McInnes, Douglas N.	University of British Columbia Library
McNiff, Philip J.	Boston Public Library
Martin, Susan K.	Johns Hopkins University Library
Miller, Charles	Florida State University Library
Miller, Robert C.	University of Notre Dame Libraries
Osburn, Charles B.	University of Cincinnati Libraries
Otto, Margaret A.	Dartmouth College Libraries
Peel, Bruce	University of Alberta Library
Peterson, Kenneth G.	Southern Illinois University Library
Pings, Vern M.	Wayne State University Libraries
Rawlins, Gordon W.	Pennsylvania State University Library
Riggs, Donald	Arizona State University Library
Rodgers, Frank	University of Miami Library
Rosenthal, Joseph	University of California, Berkeley Library
Rossell, Glenora E.	University of Pittsburgh Libraries
Rouse, Roscoe	Oklahoma State University Library
Rudolph, Gerald A.	University of Nebraska-Lincoln Libraries
Schmidt, Dean A.	University of Missouri Library
Schnaitter, Allene F.	Washington State University Library
Scott, Marianne	McGill University Library
Shank, Russell	University of California, Los Angeles Library
Sharrow, Marilyn J.	University of Manitoba Libraries
Shipman, George W.	University of Oregon Library
Shubert, Joseph F.	New York State Library
Sloan, Elaine F.	Indiana University Libraries

Smith, Eldred	University of Minnesota Libraries
Smith, Kent A.	National Library of Medicine
Souter, Thomas A.	Virginia Polytechnic Institute Libraries
Stam, David H.	New York Public Library
Strowd, Elvin E.	Duke University Libraries
Studer, William J.	Ohio State University Libraries
Talbot, Richard J.	University of Massachusetts Libraries
Taylor, Merrily E.	Brown University Library
Toombs, Kenneth E.	University of South Carolina Libraries
Treyz, Joseph H.	University of Wisconsin Libraries
Vassallo, Paul	University of New Mexico Library
Veaner, Allen B.	University of California, Santa Barbara Library
Walls, Esther	State University of New York at Stony Brook
Walton, Clyde	University of Colorado Library
Weber, David C.	Stanford University Libraries
Welsh, William J.	Library of Congress
Willis, Paul A.	University of Kentucky Libraries
Woodsworth, Anne	York University Libraries
Wyatt James F.	University of Rochester Libraries

Guests

Rowland Brown, OCLC, Inc.
Ralph Cohen, University of Virginia - Speaker
Andrew Eaton, Graduate School of Library Studies, University of Hawaii
Elliott Echelman
John Finzi, Library of Congress
Gordon Fretwell, University of Massachusetts Libraries
Ray Fry, Office of Libraries & Learning Technologies, Department of Education
Elmer Gooding, Arizona State University - Speaker
William Hartmann, Arizona State University - Speaker
Edward Holley, School of Library Science, University of North Carolina - Speaker
Joseph Howard, Library of Congress
C. Lee Jones, Council on Library Resources
Edward Lathem, Dartmouth College
Anne Le Clerq, CLR Intern, University of California, Los Angeles Library
John Lorenz
Stephen McCarthy - Speaker
Patricia McClung, CLR Intern, University of California, Los Angeles Library
Ralph McCoy
James Neal, CLR Intern, Pennsylvania State University Library
William Nugent, Library of Congress - Speaker
Kenneth Prewitt, Social Science Research Council - Speaker
David Remington, Library of Congress - Speaker
James Schmidt, Research Libraries Group
Jamer Skipper, MIDLNET
Peter Sparks, Library of Congress - Speaker
Kendon Stubbs, University of Virginia
Virginia Toliver, CLR Intern, Washington University Libraries
Robert Vosper, Graduate School of Library & Information Science,
University of California, Los Angeles
Karen Wittenborg, CLR Intern, Massachusetts Institute of Technology Libraries
Virginia Whitney

ARL Staff

Shirley Echelman, Executive Director
Carol A. Mandel, Associate Executive Director
Nicola Daval, Information Officer
Jeffrey Heynen, ARL Microform Project Coordinator
Duane E. Webster, Director, Office of Management Studies
Jeffrey J. Gardner, Associate, Office of Management Studies
Maureen Sullivan, Training Program Specialist, Office of Management Studies
Maxine Sitts, Information Services Specialist, Office of Management Studies

APPENDIX F

ASSOCIATION OF RESEARCH LIBRARIES
OFFICERS, BOARD OF DIRECTORS, COMMITTEES AND TASK FORCES

MAY 1982

ARL OFFICERS AND BOARD FOR 1981-82

Millicent D. Abell, President
James F. Govan, Vice President & President-Elect
Jay K. Lucker, Past President

Sterling J. Albrecht	(Oct. 1983)
Charles Churchwell	(Oct. 1982)
Donald Koepp	(Oct. 1983)
Eldred R. Smith	(Oct. 1982)
William J. Studer	(Oct. 1984)
Richard J. Talbot	(Oct. 1984)
Anne Woodsworth	(Oct. 1984)

ADVISORY COMMITTEES

Center for Chinese Research Materials

Lloyd E. Eastman, University of Illinois (1983)
Ying-mao Kau, Brown University (1983)
Lyman Van Slyke, Stanford University (1984)
Antony Marr, Yale University (1984)
Eugene Wu, Harvard University (1982)
Philip J. McNiff, Chairman (1982)

Office of Management Studies

Page Ackerman, UCLA Graduate School of Lib. and Info. Science (1982)
Patricia Battin (1984)
Louis E. Martin (1982)
Frank Rodgers (1983)
Martin Runkle (1983)
Clyde Walton (1984)
Jay K. Lucker, Chairman (1984)

ARL Microform Project

Duane Bogenschneider, Microfilming Corporation of America, Inc.
Joseph Boisse
Robert Grey Cole, University of Mississippi
Tina Kass, Research Libraries Group
Linda Hamilton, Research Publications, Inc.
Joseph Howard, Library of Congress
Mary Ellen Jacob, OCLC, Inc.
Elaine Sloan
Del Williams, Western Illinois University

STANDING COMMITTEES

Committee on Nominations

ARL Vice President, Chairman

Committee on ARL Statistics

Herbert F. Johnson (1984)
Kendon Stubbs, University of Virginia (1982)
Anne Woodsworth (1982)
Richard J. Talbot, Chairman (1982)

Committee on Interlibrary Loan

D. Kaye Gapen (1984)
Bernard Kreissman (1983)
Sul H. Lee (1984)
Kenneth G. Peterson (1982)
Glenora E. Rossell (1982)
Sterling J. Albrecht, Chairman (1982)

Committee on Preservation of Research Libraries Materials

David Laird (1982)
Margaret Otto (1984)
Joel L. Samuels (1982)
Peter Sparks, Library of Congress (1984)
Clyde Walton (1983)
David H. Stam, Chairman (1982)

Federal Relations Committee

Charles Churchwell (1982)
Richard M. Dougherty (1982)
Roger K. Hanson (1983)
Russell Shank (1983)
George W. Shipman (1982)
Carlton C. Rochell, Chairman (1983)

Membership Committee on Nonuniversity Libraries

Margaret Beckman (1982)
William S. Budington 1983)
Robert C. Miller (1982)
Robert Maloy (1982)
Roy L. Kidman, Chairman (1983)

ARL/CRL Joint Committee on Expanded Access to Journal Collections

Susan Brynteson, University of Delaware
Richard K. Chapin
Graham Hill*
Donald Koepp*
Elaine Sloan
Richard J. Talbot
John P. McDonald*, Chairman

(* ARL representatives)

REPRESENTATIVES

ALA Committee on Cataloging: Description and Access . . . . . Carol Mandel
ALA Interlibrary Loan Committee . . . . . Sterling Albrecht
ALA Joint Statistics Coordinating Committee . . . . . Carol Mandel
ANSI Committee Z39 . . . . . Shirley Echelman
CONSER Advisory Group . . . . . Carol Mandel
Eighteenth-Century Short Title Catalogue . . . . . Ray Frantz
Joint Committee on Union List of Serials . . . . . William Budington
LC Bibliographic Advisory Committee . . . . . James Govan
LC Cataloging-in-Publication Advisory Group . . . . . Carol Mandel
LC Network Advisory Committee . . . . . William Studer
Society of American Archivists . . . . . Herbert Finch, Cornell
Universal Serials & Book Exchange . . . . . Joanne Harrar
National Conservation Advisory Committee . . . . . David Stam
IFLA Standing Committee on Library Buildings and Equipment . . . Roscoe Rouse

ARL TASK FORCES

Task Force on Bibliographic Control (1983)

David Bishop
Merle N. Boylan
Joseph H. Howard, Library of Congress
Joseph Rosenthal
James F. Govan, Chairman

Task Force on Collection Development (1983)

Hendrik Edelman
John Finzi, Library of Congress
Warren Kuhn
Charles Osburn
Marianne Scott
Joseph Treyz, Chairman

Task Force on Library Education (1982)

Patricia Battin
Irene B. Hoadley
Herbert F. Johnson
James Ranz
Edward Holley, University of North Carolina
Herbert White, Indiana University
Margot B. McBurney, Chairman

Task Force on National Library Network Development (1983)

Harold W. Billings
John P. McGowan
Susan K. Martin
William J. Welsh
William J. Studer, Chairman

Task Force on Research Library Staffing (1984)

Millicent D. Abell
Nancy A. Brown
Irene B. Hoadley
John P. McGowan
Russell Shank
Eldred Smith, Chairman

APPENDIX G

ARL MEMBERSHIP LIST
MAY 1982

University of Alabama Libraries
P.O. Box S
University, Alabama 35486
D. Kaye Gapen, Dean of Univ. Librs.
(205) 348-7561

University of Alberta Library
Edmonton, Alberta, Canada T6G 2JB
Bruce Peel, Libn. to the Univ.
(403) 432-3790

University of Arizona Library
Tucson, Arizona 85721
W. David Laird, Librarian
(602) 626-2101

Arizona State University Library
Tempe, Arizona 85281
Donald Riggs, Libn.
(602) 965-3417

Boston Public Library
Copley Square
Boston, Massachusetts 02117
Philip J. McNiff, Librarian
(617) 536-5400

Boston University Library
Boston, Massachusetts 02215
John Laucus, Director
(617) 353-3710

Brigham Young University Library
324 Lee Library
Provo, Utah 84602
Sterling J. Albrecht, Univ. Libn.
(801) 378-2905

University of British Columbia Library
Vancouver, B.C., Canada V6T IW5
Douglas N. McInnes, Acting Librarian
(604) 228-2298

Brown University Library
Providence, Rhode Island 02912
Lawrence J. Kipp, Library Consultant
(401) 863-2162

University of California Library, Berkeley
Berkeley, California 94720
Joseph Rosenthal, Director
(415) 642-3773

University of California Library, Davis
Davis, California 95616
Bernard Kreissman, Librarian
(916) 752-2110

University of California, Irvine
The University Library
P.O. Box 19557
Irvine, California 92713
Calvin J. Boyer, University Librarian
(714) 833-5212

University of California Library, Los Angeles
Los Angeles, California 90024
Russell Shank, Librarian
(213) 825-1201

University of California Library, Riverside
P.O. Box 5900
Riverside, California 92507
Joan Chambers, University Librarian
(714) 787-3221

University of California, San Diego
The University Library
La Jolla, California 92037
Millicent D. Abell, Librarian
(714) 452-3061

University of California, Santa Barbara
The University Library
Santa Barbara, California 93106
Allen B. Veaner, Librarian
(805) 961-3256

Case Western Reserve University Libraries
Cleveland, Ohio 44106
Ann Drain, Acting Director
(216) 368-2990

Center for Research Libraries
5721 Cottage Grove Avenue
Chicago, Illinois 60637
Donald B. Simpson, Director
(312) 955-4545

University of Chicago Library
Chicago, Illinois 60637
Martin D. Runkle, Director
(312) 753-2933

University of Cincinnati Libraries
Cincinnati, Ohio 45221
Charles B. Osburn, Vice Provost
for Univ. Libraries
(513) 475-2218

University of Colorado Library
Boulder, Colorado 80309
Clyde Walton, Director
(303) 492-7511

Colorado State University Library
Fort Collins, Colorado 80521
Le Moyne W. Anderson, Director
(303) 491-5911

Columbia University Libraries
New York, New York 10027
Patricia Battin, Vice Pres.
& Univ. Libn.
(212) 280-2247

University of Connecticut Library
Storrs, Connecticut 06268
John P. McDonald, Director
(203) 486-2219

Cornell University Libraries
Ithaca, New York 14850
Louis E. Martin, Univ. Libn.
(607) 256-3689

Dartmouth College Libraries
Hanover, New Hampshire 03755
Margaret A. Otto, Libn.
(603) 646-2235

Duke University Libraries
Durham, North Carolina 27706
Elvin E. Strowd, University Librarian
(919) 684-2034

Emory University Library
Atlanta, Georgia 30322
Herbert F. Johnson, Director
(404) 329-6861

University of Florida Libraries
Gainesville, Florida 32603
Gustave A. Harrer, Director
(904) 392-0341

Florida State University Library
Tallahassee, Florida 32306
Charles E. Miller, Director
(904) 644-5211

Georgetown University Library
Washington, D.C. 20007
Joseph E. Jeffs, Director
(202) 625-4095

University of Georgia Libraries
Athens, Georgia 30601
David Bishop, Director
(404) 542-2716

University of Guelph Library
Guelph, Ontario, Canada N1G 2W1
Margaret Beckman, Chief Libn.
(519) 824-4120

Harvard University Library
Wadsworth House
Cambridge, Massachusetts 02138
Oscar Handlin, Director
(617) 495-2401

University of Hawaii Library
2550 The Mall
Honolulu, Hawaii 96822
Don L. Bosseau, Director
(808) 948-7205

University of Houston Libraries
Houston, Texas 77004
Robin Downes, Director
(713) 749-4241

Howard University Libraries
Washington, D.C. 20001
Binford H. Conley, Director
(202) 636-7234

University of Illinois Library
1408 West Gregory Drive
Urbana, Illinois 61801
Hugh C. Atkinson, Univ. Librarian
(217) 333-0790

Indiana University Libraries
Bloomington, Indiana 47401
Elaine F. Sloan, Dean of Univ. Librs.
(812) 335-3404

University of Iowa Libraries
Iowa City, Iowa 52240
Dale M. Bentz, Univ. Librarian
(319) 353-4450

Iowa State University Library
Ames, Iowa 50011
Warren B. Kuhn, Dean of Lib. Services
(515) 294-1442

John Crerar Library
35 West 33rd Street
Chicago, Illinois 60616
William S. Budington, Director
(312) 225-2526

Johns Hopkins University Library
The Milton S. Eisenhower Library
Baltimore, Maryland 21218
Susan K. Martin, Libn.
(301) 338-8325

University of Kansas Library
Lawrence, Kansas 66044
James Ranz, Dean of Libraries
(913) 864-3601

University of Kentucky Libraries
Lexington, Kentucky 40506
Paul A. Willis, Director
(606) 257-3801

Kent State University Libraries
Kent, Ohio 44242
Hyman W. Kritzer, Assistant Provost &
Director of Libraries
(216) 672-2962

Library of Congress
Washington, D.C. 20540
Daniel J. Boorstin, Librarian
(202) 287-5205

Linda Hall Library
Kansas City, Missouri 64110
Thomas D. Gillies, Director
(816) 363-4600

Louisiana State University Library
Baton Rouge, Louisiana 70803
George Guidry, Jr., Director
(504) 388-2217

McGill University Library
3459 McTavish Street
Montreal, Canada H3A 1Y1
Marianne Scott, Director
(514) 392-4949

McMaster University Library
1280 Main Street West
Hamilton, Ontario, Canada L85 4L6
Graham R. Hill, University Librarian
(416) 525-9140 Local 4359

The University of Manitoba Libraries
Winnipeg, Manitoba R3T 2N2
Canada
Marilyn J. Sharrow, Director
(204) 474-9881

University of Maryland Library
College Park, Maryland 20742
H. Joanne Harrar, Librarian
(301) 454-3011

University of Massachusetts Libraries
Amherst, Massachusetts 01002
Richard J. Talbot, Director
(413) 545-0284

Massachusetts Inst. of Technology Libs.
Cambridge, Massachusetts 02139
Jay K. Lucker, Director
(617) 253-5651

University of Miami Library
P.O. Box 248214
Coral Gables, Florida 33124
Frank Rodgers, Director
(305) 284-3551

University of Michigan Library
Ann Arbor, Michigan 48109
Richard M. Dougherty, Director
(313) 764-9356

Michigan State University Library
East Lansing, Michigan 48823
Richard E. Chapin, Director
(517) 355-2341

University of Minnesota Libraries
Minneapolis, Minnesota 55455
Eldred Smith, Director
(612) 373-3097

University of Missouri Library
Columbia, Missouri 65201
Dean A. Schmidt, Interim Director
(314) 882-4701

National Agricultural Library
Beltsville, Maryland 20705
Richard A. Farley, Director
(301) 344-4248

National Library of Canada
395 Wellington Street
Ottawa, Ont., Canada K1A 0N4
Joseph Guy Sylvestre, Librarian
(613) 996-1623

National Library of Medicine
Bethesda, Maryland 20014
Martin M. Cummings, Director
(301) 496-6221

University of Nebraska-Lincoln
The University Libraries
Lincoln, Nebraska 68588-0410
Gerald A. Rudolph, Dean of Libraries
(402) 472-2526

The Newberry Library
60 West Walton Street
Chicago, Illinois 60610
Joel L. Samuels, Dir. of Lib. Sers.
(312) 943-9090

The University of New Mexico
General Library
Albuquerque, New Mexico 87131
Paul Vassallo, Dean of Lib. Sers.
(505) 277-4241

New York Public Library
Fifth Avenue at 42nd Street
New York, New York 10018
David H. Stam, Director of the
Research Libraries
(212) 930-0800

New York State Library
Cultural Education Center
Empire State Plaza
Albany, New York 12234
Joseph F. Shubert, State Librarian
(518) 474-5930

New York University Libraries
New York, New York 10003
Carlton C. Rochell, Dean of Libraries
(212) 598-7676

University of North Carolina Libraries
Chapel Hill, North Carolina 27515
James F. Govan, Director
(919) 962-1301

Northwestern University Libraries
Evanston, Illinois 60211
John P. McGowan, Librarian
(312) 492-7640

University of Notre Dame Libraries
Notre Dame, Indiana 46556
Robert C. Miller, Librarian
(219) 239-5252

Ohio State University Libraries
Columbus, Ohio 43210
William J. Studer, Director
(614) 422-4241

University of Oklahoma Library
Norman, Oklahoma 73069
Sul H. Lee, Dean, University Librs.
(405) 325-2611 or 2614

Oklahoma State University Library
Stillwater, Oklahoma 74078
Roscoe Rouse, Dean of Lib. Ser.
(405) 624-6321

University of Oregon Library
Eugene, Oregon 97403
George W. Shipman, Univ. Libn.
(503) 686-3056

University of Pennsylvania Libraries
Philadelphia, Pennsylvania 19104
Richard De Gennaro, Director
(215) 243-7091

Pennsylvania State University Library
University Park, Pennsylvania 16802
Stuart Forth, Dean of Univ. Libraries
(814) 865-0401

University of Pittsburgh Libraries
Pittsburgh, Pennsylvania 15260
Glenora Edwards Rossell, Director
(412) 624-4401

Princeton University Library
Princeton, New Jersey 08540
Donald Koepp, Director
(609) 452-3170

Purdue University Library
Lafayette, Indiana 47907
Joseph M. Dagnese, Director
(317) 494-2900

Queen's University
Douglas Library
Kingston, Canada K7L 5C4
Margot B. McBurney, Chief Libn.
(613) 547-5950

Rice University Library
6100 S. Main, Box 1892
Houston, Texas 77001
Samuel Carrington, Director
(713) 527-4022

University of Rochester Libraries
Rochester, New York 14627
James F. Wyatt, Director
(716) 275-4463

Rutgers University Library
New Brunswick, New Jersey 08901
Hendrik Edelman, Univ. Libn.
(201) 932-7505

University of Saskatchewan
Saskatoon, Canada S7N OWO
Nancy A. Brown, Univ. Libn.
and Director of Libraries
(306) 343-4216

Smithsonian Institution Libraries
Constitution Avenue at 10th St., N.W.
Washington, D.C. 20560
Robert Maloy, Director
(202) 357-3337

University of South Carolina Libraries
Columbia, South Carolina 29208
Kenneth E. Toombs, Director of Libs.
(803) 777-3142

University of Southern California Library
Los Angeles, California 90007
Roy L. Kidman, Librarian
(213) 743-2543

Southern Illinois University Library
Carbondale, Illinois 62901
Kenneth G. Peterson, Dean of
Library Affairs
(618) 453-2522

Stanford University Libraries
Stanford, California 94305
David C. Weber, Director
(415) 497-2016

State University of New York at Albany
Libraries
1400 Washington Avenue
Albany, New York 12222
Joseph Z. Nitecki, Director
(518) 457-8540

State University of New York at Buffalo
Libraries
Buffalo, New York 14214
Saktidas Roy, Director
(716) 636-2965

State University of New York at Stony Brook
Library
Stony Brook, New York 11794
John B. Smith, Director & Dean of Lib.
(516) 246-5650

Syracuse University Libraries
Syracuse, New York 13210
Donald C. Anthony, Director
(315) 423-2574

Temple University Library
Paley Library
Philadelphia, Pennsylvania 19122
Joseph A. Boisse, Director
(215) 787-8231

University of Tennessee Libraries
Knoxville, Tennessee 37916
Donald R. Hunt, Director
(615) 974-4127

University of Texas Libraries
Austin, Texas 78712
Harold W. Billings, Director
(512) 471-3811

Texas A&M University Library
College Station, Texas 77843
Irene B. Hoadley, Director
(713) 845-8111

University of Toronto Libraries
Toronto, Ont., Canada M5S 1A5
David Esplin, Acting Chief Libn.
(416) 978-2292

Tulane University Library
New Orleans, Louisiana 70118
Dorothy L. Hagedorn
Acting University Librarian
(504) 865-5131

University of Utah Libraries
Salt Lake City, Utah 84112
Roger K. Hanson, Director
(801) 581-8558

Vanderbilt University Library
419 21st Avenue South
Nashville, Tennessee 37203
Frank P. Grisham, Director
(615) 322-2834

Virginia Polytechnic Inst. and State Univ.
Blacksburg, Virginia 24061
H. Gordon Bechanan, Director of Libs.
(703) 961-5593

University of Virginia
Aldermen Library
Charlottesville, Virginia 22901
Ray Frantz, Jr., Librarian
(804) 924-3026 or 7849

University of Washington Library
Seattle, Washington 98195
Merle N. Boylan, Director
(206) 543-1760

Washington State University Library
Pullman, Washington 99163
Allene F. Schnaitter, Director
(509) 335-4557

Washington University Libraries
St. Louis, Missouri 63130
Charles Churchwell, Librarian
(314) 889-5400

Wayne State University Libraries
Detroit, Michigan 48202
Vern M. Pings, Director
(313) 577-4020

University of Western Ontario Libraries
London 72, Canada
Robert Lee, Director of Libs.
(519) 679-3165

University of Wisconsin Libraries
Madison, Wisconsin 53706
Joseph H. Treyz, Jr., Director
(608) 262-3521

Yale University Libraries
New Haven, Connecticut 06520
Rutherford D. Rogers, Librarian
(203) 436-2456

York University Libraries
4700 Keele Street
Downsview, Ontario, Canada M3J 2R2
Anne Woodsworth, Director
(416) 667-2235

APPENDIX H

ASSOCIATION OF RESEARCH LIBRARIES

REPORT ON FINANCIAL STATEMENTS

(with supplementary information)
(Modified Cash Basis)

YEARS ENDED DECEMBER 31, 1981 AND 1980

ASSOCIATION OF RESEARCH LIBRARIES

Years ended December 31, 1981 and 1980

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GARNER, BLOOM & ROBINSON, CHTD
CERTIFIED PUBLIC ACCOUNTANTS

8630 FENTON STREET, SUITE 708
SILVER SPRING, MARYLAND 20910
301-585-5300

Board of Directors
Association of Research Libraries
Washington, DC

We have examined the statements of assets and liabilities arising from cash transactions of the Association of Research Libraries as of December 31, 1981 and 1980, and the related statements of revenue collected and expenses paid and changes in fund balances for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We did not examine the financial statements of the Foreign Newspaper Microfilm Project Agency Fund which reflect total assets and revenues constituting 1% and 15% respectively for 1981 and 6% and 13% for 1980 of the related totals. These statements were examined by other auditors whose reports dated February 17, 1982 and March 3, 1981 have been furnished to us. Our opinion expressed herein, insofar as it relates to the amounts included for such project, is based solely upon the reports of the other auditors.

As described in Note 1, the Association's policy is to prepare its financial statements on a modified basis of cash receipts and disbursements; consequently certain revenue and the related assets are recognized when received rather than when earned, and certain expenses are recognized when paid rather than when the obligation is incurred. Accordingly, the accompanying financial statements are not intended to present financial position and results of operations in conformity with generally accepted accounting principles.

In our opinion, based upon our examination and the report of the other auditors, the financial statements mentioned present fairly the assets and liabilities arising from cash transactions of the Association of Research Libraries as of December 31, 1981 and 1980, and the revenue collected and expenses paid and changes in fund balances for the years then ended, on the basis of accounting described in Note 1, applied on a consistent basis.

Garner, Bloom & Robinson, Chtd.

January 22, 1982

ASSOCIATION OF RESEARCH LIBRARIES

STATEMENTS OF ASSETS AND LIABILITIES
ARISING FROM CASH TRANSACTIONS

ASSETS

	December 31, 1981	December 31, 1980
Cash in bank and on hand	$ 60,459	$ 45,978
Cash in savings accounts	1,963	24,875
Cash held by others - agency fund	4,763	46,438
Savings certificates	554,029	633,548
Money market investments (at lower of cost or market)	153,970	
Deposits	465	894
Furniture and equipment, less accumulated depreciation (Note 5)	18,601	21,613
Total	$ 794,250	$ 773,346

LIABILITIES AND FUND BALANCES

Payroll taxes withheld	$ 2,375	$ 3,457
Due to Center for Research Libraries	1,354	
Special programs for which the Association is accountable to the grantors	216,451	192,543
Total liabilities	220,180	196,000
General Operating Fund	142,502	93,099
Foreign Newspaper Microfilm Project Agency Fund	3,409	46,438
Chinese Center Revolving Fund	428,159	437,809
Total fund balances	574,070	577,346
Total	$ 794,250	$ 773,346

See accompanying notes to financial statements

ASSOCIATION OF RESEARCH LIBRARIES

GENERAL OPERATING FUND
STATEMENTS OF REVENUE COLLECTED AND
EXPENSES PAID AND CHANGES IN FUND BALANCE

	Year ended December 31,	
	1981	1980
Revenue		
Dues	$ 339,000	$ 275,375
Interest	37,211	19,357
Publications	8,945	3,759
Royalties	19	46
	385,175	298,537
Expenses	362,573	326,690
Less administrative expenses charged to special programs	26,801	21,489
Net expenses	335,772	305,201
Excess (deficiency) of revenue collected over expenses paid	49,403	(6,664)
Fund balance, beginning of year	93,099	99,763
Fund balance, end of year	$ 142,502	$ 93,099

See accompanying notes to financial statements

ASSOCIATION OF RESEARCH LIBRARIES

FOREIGN NEWSPAPER MICROFILM PROJECT AGENCY FUND
STATEMENTS OF REVENUE COLLECTED AND EXPENSES PAID AND
CHANGES IN FUND BALANCE

	Year ended December 31,	
	1981	1980
Revenue		
Dues	$ 86,840	$ 90,740
Sales to members and non-members	125,156	80,191
Interest	1,695	2,223
	213,691	173,154
Expenses		
Newspapers and microfilm	99,359	75,394
Purchases for members and non-members	95,132	54,341
Salaries	46,044	40,005
Payroll taxes	3,062	2,452
Insurance	1,661	1,276
Storage	1,686	1,760
Supplies	1,697	1,438
Royalties	2,785	3,252
Miscellaneous	5,294	4,159
	256,720	184,077
Deficiency of revenue collected over expenses paid	(43,029)	(10,923)
Fund balance, beginning of year	46,438	57,361
Fund balance, end of year	$ 3,409	$ 46,438

See accompanying notes to financial statements

ASSOCIATION OF RESEARCH LIBRARIES

CHINESE CENTER REVOLVING FUND
STATEMENTS OF REVENUE COLLECTED AND EXPENSES PAID AND
CHANGES IN FUND BALANCE

	Year ended December 31, 1981	1980
Revenue		
Sales of publications	$ 81,187	$ 104,484
Interest income	61,625	48,481
	142,812	152,965
Expenses		
Transfers to Center for Chinese Research Materials Program	104,943	117,401
Cost of publications	43,878	50,482
Postage and other expenses	3,641	2,905
	152,462	170,788
Deficiency of revenue collected over expenses paid	(9,650)	(17,823)
Fund balance, beginning of year	437,809	455,632
Fund balance, end of year	$ 428,159	$ 437,809

See accompanying notes to financial statements

ASSOCIATION OF RESEARCH LIBRARIES

NOTES TO FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of accounting

The Association's policy is to prepare its financial statements on a modified cash basis that includes recording of depreciation and amortization on capitalized assets, and of accrued liabilities for special programs and for federal and state income taxes withheld. Under this basis, revenues are recognized when collected rather than when earned, and expenditures are generally recognized when paid rather than when incurred. Consequently, dues receivable, trade accounts payable, prepaid expenses, and certain accrued expenses at December 31, 1981 and 1980 are not included in the financial statements. If an expenditure results in the creation of an asset having an estimated useful life which extends substantially beyond the year of acquisition, the expenditure is capitalized and depreciated or amortized over the estimated useful life of the asset.

Fund accounting

To ensure observance of limitations and restrictions placed on the use of resources available to the Association, the accounts of the Association are maintained in accordance with the principles of fund accounting. This is the procedure by which resources for various purposes are classified for accounting and reporting purposes into funds established according to their nature and purposes. Separate accounts are maintained for each fund; accordingly, all financial transactions have been recorded and reported by fund group.

Grants are accounted for separately and classified in the liabilities section of the accompanying statements of assets and liabilities arising from cash transactions as "special programs for which the Association is accountable to the grantors".

Furniture, equipment and depreciation

Furniture and equipment are recorded at cost. Depreciation of furniture and equipment is provided on both accelerated and straight-line methods over the estimated useful lives of the assets.

ASSOCIATION OF RESEARCH LIBRARIES

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

2. INCOME TAXES

The Association is exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code.

3. LEASE

The Association rents its office facilities under an operating lease that expires on June 30, 1982. Minimim lease payments due in 1982 are $22,122.

Total rent and storage charges were $45,975 for 1981 and $42,183 for 1980.

4. RETIREMENT PLAN

The Association has a retirement plan that covers substantially all full-time employees. Contributions to the plan are based on a percentage of salary for enrolled staff members. Total amounts paid in by the Association were $56,868 and $49,040 for 1981 and 1980 respectively.

5. FURNITURE AND EQUIPMENT

Furniture and equipment are categorized as follows:

	1981	1980
Center for Chinese Research Materials	$ 12,074	$ 11,887
Academic Library Program (OMS)	15,641	15,641
Association of Research Libraries	31,264	31,077
	58,979	58,605
Less: Accumulated depreciation	40,378	36,992
Furniture and equipment less accumulated depreciation	$ 18,601	$ 21,613

SUPPLEMENTARY INFORMATION

Our examinations of the financial statements included in the preceding section of this report were directed to an expression of our opinion on those financial statements taken as a whole. The supplementary information included on pages 9 through 14 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the examination of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Garner, Bloom & Robinson, Chtd.

Certified Public Accountants

Silver Spring, Maryland
January 22, 1982

ASSOCIATION OF RESEARCH LIBRARIES

GENERAL OPERATING FUND SCHEDULES OF EXPENSES

	Year ended December 31, 1981	1980
Staff expenses		
Salaries	$ 161,040	$ 142,629
Employee benefits	36,046	23,337
Transition	4,578	
Travel and entertainment	13,482	8,113
Total staff expenses	215,146	174,079
Administrative expenses		
Professional fees	5,195	6,045
Insurance	1,549	1,467
Rent	11,126	11,285
Communications	6,673	5,364
Depreciation	2,009	1,947
Stationery and office	16,048	16,005
Periodicals and subscriptions	1,968	2,143
Dues	2,737	5,588
Total administrative expenses	47,305	49,844
Projects and services expenses		
Publications	8,345	13,363
Funding for special programs - Office of Management Studies	55,000	52,500
Microform	966	
Total projects and services expenses	64,311	65,863
ARL meetings and travel expenses		
Board meetings	3,974	5,874
Executive committee meetings	668	2,334
ARL sponsored membership travel	1,225	
Staff expenses	1,705	
Committees and task forces	5,526	9,610
Conferences	22,713	19,086
Total ARL meetings and travel expenses	35,811	36,904
	$ 362,573	$ 326,690

ASSOCIATION OF RESEARCH LIBRARIES

SPECIAL PROGRAMS
SCHEDULES OF REVENUE COLLECTED AND EXPENSES PAID AND CHANGES IN PROGRAM BALANCES

	Center For Chinese Research Materials	Academic Library Program	Lilly Project	Preservation
Revenue				
Grants	$ 100,000	$ 60,000	$ 39,150	$ 80,000
Sale of publications		69,826		
ARL support - transferred from General Operating Fund		55,000		
Support from Chinese Center Revolving Fund	104,943			
Workshops and training programs				
Management institutes		82,541		
Interest income		20,048		
Miscellaneous				
Total revenue	204,943	287,415	39,150	80,000
Expenses				
Allocated administrative fees	26,801			
Consulting fees, computer expenses and sub-contractors	3,626	1,792	13,000	15,000
Depreciation		1,152		
Employee benefits	19,497	16,006	2,088	11,953
Miscellaneous		773		
Office expenses	7,098	12,744	100	886
Payroll taxes	7,721	11,748		
Periodicals and subscriptions	608	1,688		
Postage	659	5,885	400	300
Printing		30,543	100	1,093
Professional services				
Rent and storage	16,699	16,232	800	960
Salaries	117,990	138,054	8,355	45,169
Telephone	1,324	7,224	600	1,338
Training (net)		10,419		
Travel	2,920	64,228	6,090	7,510
Total expenses	204,943	318,488	31,533	84,209
Excess (deficiency) of revenue collected over expenses paid	-	(31,073)	7,617	(4,209)
Program balance, beginning of year	-	184,757	(4,287)	7,314
Program balance, end of year	$ -	$ 153,684	$ 3,330	$ 3,105

Microform Project	SPEC Wilson (New)	Economics Of Research Libraries	Conser	Other Projects	Year ended December 31, 1981 Total	1980 Total
$ 59,000	$ 14,750	$ 25,000	$ 2,500	$	$ 380,400	$ 365,922
				25	69,851	64,085
					55,000	53,279
					104,943	117,401
						1,742
					82,541	65,729
1,446				105	21,599	17,152
						150
60,446	14,750	25,000	2,500	130	714,334	685,460
					26,801	21,489
12,261		3,000			48,679	114,920
					1,152	1,718
		1,705		89	51,338	49,177
17	188			8	986	3,577
1,169	720	1,800			24,517	23,293
					19,469	18,341
					2,296	1,714
	312				7,556	8,716
	4,555	306			36,597	35,263
158					34,849	30,898
1,510	8,400	7,447		439	327,364	314,719
					10,486	9,619
					10,419	1,274
		4,583	1,954	632	87,917	61,172
15,115	14,175	18,841	1,954	1,168	690,426	695,890
45,331	575	6,159	546	(1,038)	23,908	(10,430)
	1,772			2,987	192,543	202,973
$ 45,331	$ 2,347	$ 6,159	$ 546	$ 1,949	$ 216,451	$ 192,543

ASSOCIATION OF RESEARCH LIBRARIES

OTHER PROGRAMS
SCHEDULE OF REVENUE COLLECTED AND EXPENSES PAID AND CHANGES IN PROGRAM BALANCES

Year ended December 31, 1981

	Collection Assessment	Brasonese Conference
Revenue		
Sale of publications	$	$
Interest income		105
Total revenue		105
Expenses		
Miscellaneous		8
Salaries	439	
Benefits	89	
Travel	632	
Total expenses	1,160	8
Excess (deficiency) of revenue collected over expenses paid	(1,160)	97
Program balance, beginning of year		1,866
Program balance, end of year	$(1,160)	$ 1,963

Index Grant (Wilson)	United States Japan Friendship Commissions	Total Other Projects
$	$ 25	$ 25
		105
	25	130
		8
		439
		89
		632
		1,168
	25	(1,038)
2,175	(1,054)	2,987
$ 2,175	$(1,029)	$ 1,949

ASSOCIATION OF RESEARCH LIBRARIES

OFFICE OF MANAGEMENT STUDIES
SCHEDULE OF PROGRAMS

Year ended December 31, 1981

	Academic Library Program	Lilly Project	Preservation
Revenue			
Grants	$ 60,000	$ 39,150	$ 80,000
Sale of publications	69,826		
ARL support - transferred from General Operating Fund	55,000		
Management institutes	82,541		
Interest income	20,048		
Total revenue	287,415	39,150	80,000
Expenses			
Allocated administrative fees			
Consulting fees, computer expenses and sub-contractors	1,792	13,000	15,000
Depreciation	1,152		
Employee benefits	16,006	2,088	11,953
Miscellaneous	773		
Office expenses	12,744	100	886
Payroll taxes	11,748		
Periodicals and subscriptions	1,688		
Postage	5,885	400	300
Printing	30,543	100	1,093
Rent and storage	16,232	800	960
Salaries	138,054	8,355	45,169
Telephone	7,224	600	1,338
Training (net)	10,419		
Travel	64,228	6,090	7,510
Total expenses	318,488	31,533	84,209
Excess (deficiency) of revenue collected over expenses paid	(31,073)	7,617	(4,209)
Program balance, beginning of year	184,757	(4,287)	7,314
Program balance, end of year	$ 153,684	$ 3,330	$ 3,105

SPEC Wilson (New)	Economics Of Research Libraries	Collection Assessment	United States Japan Friendship Commissions	Total
$ 14,750	$ 25,000	$	$	$ 218,900
			25	69,851
				55,000
				82,541
				20,048
14,750	25,000		25	446,340
	3,000			32,792
				1,152
	1,705	89		31,841
188				961
720	1,800			16,250
				11,748
				1,688
312				6,897
4,555	306			36,597
				17,992
8,400	7,447	439		207,864
				9,162
				10,419
	4,583	632		83,043
14,175	18,841	1,160		468,406
575	6,159	(1,160)	25	(22,066)
1,772			(1,054)	188,502
$ 2,347	$ 6,159	$(1,160)	$(1,029)	$ 166,436

ASSOCIATION OF RESEARCH LIBRARIES

STATEMENTS OF CHANGES IN CASH, MONEY MARKET INVESTMENTS AND CASH BALANCES

	Year ended December 31, 1981	1980
SOURCES OF CASH		
Excess (deficiency) of revenue collected over expenses paid		
General Operating Fund	$ 49,403	$ (6,664)
Foreign Newspaper Microfilm Project Agency Fund	(43,029)	(10,923)
Chinese Center Revolving Fund	(9,650)	(17,823)
Special Programs	23,908	(10,430)
Total	20,632	(45,840)
Add items not requiring the outlay of cash - Depreciation	3,385	3,665
Cash provided (absorbed) by operations	24,017	(42,175)
Increase in payroll taxes withheld		194
Decrease in deposits	429	200
Increase in due to Center for Research Libraries	1,354	
Total	25,800	(41,781)
USES OF CASH		
Decrease in payroll taxes withheld	1,082	
Purchase of furniture and equipment	373	391
Funds collected and payable to others		3,500
Total	1,455	3,891
Increase (decrease) in cash	$ 24,345	$ (45,672)

ASSOCIATION OF RESEARCH LIBRARIES

STATEMENTS OF CHANGES IN CASH,
MONEY MARKET INVESTMENTS, AND CASH BALANCES
(CONTINUED)

	Year ended December 31, 1981	Year ended December 31, 1980	Increase (Decrease)
Changes in cash			
Cash in bank and on hand	$ 60,459	$ 45,978	$ 14,481
Cash in savings accounts	1,963	24,875	(22,912)
Cash held by others - agency fund	4,763	46,438	(41,675)
Savings certificates	554,029	633,548	(79,519)
Money market investments	153,970		153,970
Total	$ 775,184	$ 750,839	$ 24,345